

*Includes tree tax

Autumn

Number 71 — March to May 1990

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—SELF SUFFICIENCY AND PLANET CARE—

EARTH GARDEN

—FOR BUSH OR CITY ALTERNATIVES—



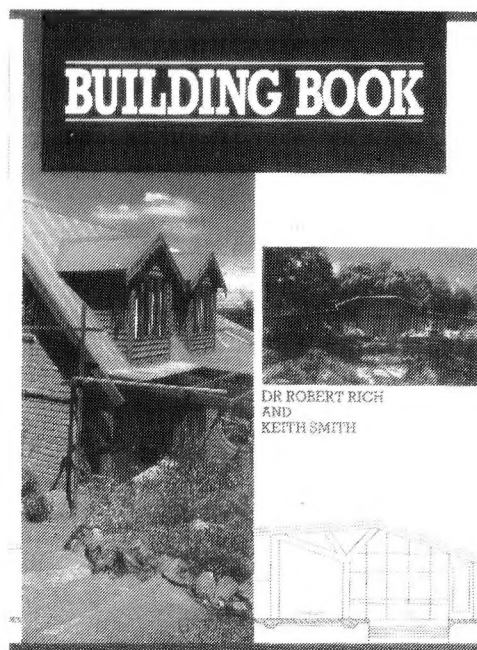
- Saving East Gippsland's tall trees • Build your own fret saw • Bob Rich on mudbricks — the best reply! • Season By Season with Jackie French
- Earth People Write • LAND LINES • Unclassifieds and much more . . .

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EARTH GARDEN BOOKS

Order form on page 56



EARTH GARDEN BUILDING BOOK *Design and build your own house*

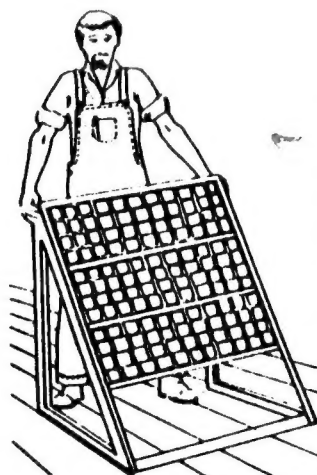
Dr Robert Rich and Keith Smith
Nelson, 1987, 315 pages, illustrated, large format paperback.

This is the book many people have been waiting for since they first dreamt of building their own home from natural materials in harmony with their surroundings. It answers all the questions for Australian owner-builders. It's a 'practical book for dreamers' and it faces the difficult subjects square on. What the authors have done is show how anyone of average intelligence and reasonable health can build their own home, and probably not end up with a 25 year mortgage at the end of it all.

"This book is intended to provide an antidote to the stereotyped Australian suburban sprawl of red brick houses with red tile roofs, set squarely in a rectangle of ground," said authors Bob Rich, and former Earth Garden publisher and editor, Keith Smith.

AT LAST! EG BINDERS TO PROTECT YOUR COLLECTION

These sturdy magazine binders have recently been produced to protect your collection of back issues. Each binder snugly holds 12 copies of Earth Garden, and prevents tears, dog ears and bent pages. The binders are made from a tough, 'deer-hide tan' vinyl, with the Earth Garden name and logo stamped in gold foil on the cover and spine.



ENERGY WORKS! *Home Energy Systems*

By Keith Smith
Nelson, Melbourne, 1985,
large format paperback, 211
pages, illustrated. □ \$19.95
posted.

Why spend the rest of your life paying someone else for your electricity? Here's how to plug in the renewable energy of the sun, wind or water using an efficient 12V or 240V solar electric system, wind generator or water turbine. Run lights, radio, TV, computers, tools and appliances wherever you live.

"The major part of this book is devoted to practical issues, hardware and actual installations.

"... This book should appeal to anyone with an interest in the supply of energy to weekenders, farms or other remote dwellings or even to the suburban household." — Dr C. J. L. Cornish of Murdoch University, WA, in *APACE WA Newsletter*.



HARD TIMES HANDBOOK

Survive — and thrive!

Keith & Irene Smith
Nelson, 1986, 204 pages,
70 illustrations. □

This is the second, corrected edition of our practical book of skills, strategies and short-cuts for urban survival. **HARD TIMES HANDBOOK** outlines a new, self-reliant

approach to city living. It tells you how to do more with less, be prepared for food shortages and emergencies, save energy, make money without a job and manage your food supply. Make bread, yoghurt, soft cheese, candles and soap. There are 150 recipes for cheap, healthy tucker and 180 money-saving household hints.

—SELF SUFFICIENCY AND PLANET CARE—
EARTH GARDEN
 —FOR BUSH OR CITY ALTERNATIVES—

Number 71 — March-May 1990

•Front Cover. We've now completed our first three years of publishing Earth Garden, so we thought it might be safe to show our faces properly at last. Your Editors, from left, Alan Thomas, Camille Thomas, and on the bottom row, our son Tane, and Jill's big dog, 'Big Dog'. •Photo by Jill Redwood.
 •Back Cover. Some of the colourful, organically-grown home produce from Pamela Odijk's garden. Read about her 'new' cottage and lifestyle on page 16. •Photograph by Herman Odijk. •This issue's tree tax will be donated to the community of Goongerah in East Gippsland.

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Founded by Keith & Irene Smith, 1972.

Published and edited by
 Camille and Alan Thomas.

Book Review Editor: Sophie Masson.
 Illustrations by Bronwyn Halls.

EARTH GARDEN is Australia's original journal of self-sufficiency and alternatives. It is intended as a forum of practical ideas, shared knowledge, sources and to point towards alternatives to unfulfilling consumerist lifestyles. It's about putting a roof over your head, growing your own food organically, aiming for appropriate, renewable home energy systems, and surviving - and thriving - in the city or the bush, with the inner changes which follow when you're in harmony with Nature.

Each issue we donate a portion of the cover price to a community group involved in tree planting or forest conservation projects to help balance the use of the partly recycled paper used for printing Earth Garden. We would like to see all publishers pay a tree tax.

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Contributions to EARTH GARDEN are welcome — sharing information and experiences with other readers strengthens the network of Earth Gardeners.

Photos, illustrations and diagrams are important when sending us contributions.

Subscribers are sustainers — for subscription details see page 56.

We welcome advertisements appropriate to the aims and ideals of EARTH GARDEN, but reserve the right to refuse ads at our discretion. Write to us for display rates.

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Dear readers,

Welcome to the March edition of Earth Garden. This is our first issue since returning to quarterly publication, and we're sure that you'll find plenty of interesting articles to enjoy. After three years we've finally relented to suggestions from some readers that we publish a photo of ourselves, so you can see what your editors look like. This month's front cover is the result.

Over this summer we had a lovely relaxing week at the Down To Earth ConFest on the banks of the upper Murray River near Walwa. Apart from the heat over New Year at the ConFest there hasn't been a lot of scorching summer sun this year. In fact as we write we're emerging from record wet and cold patches, with some parts of the Highlands receiving more rain in a day than their usual quota for two or more months. With a bit of luck we'll be passing the riskiest part of another bushfire season in southern Australia with no major disasters. The only disappointment around here is from a certain five year old who's getting rather fed up with our latest chooks. Gladys, our new big fat Black Orphington champion chook, and Myrtle, a Buff Orphington, have gone on (laying) strike with the rest of the hen house over the constant weather changes from boiling hot to freezing cold.

As we are writing, the future of the National Estate forests in East Gippsland is being decided. In this month's Earth Garden there's an article about our experiences being involved in the direct forest action over the summer to help save these forests for future generations — hence Camille's flag on the front cover. If the Government's proposal turns out to be the end of this summer's major environmental dispute, it will be a huge victory for our country's forests and a deserved reward for the many people who have put their energy into this struggle over the past ten years or more.

We discovered recently that Queensland University researchers are about to investigate why so few Queenslan-

ders use solar hot water heating. Apparently 45 percent of Northern Territorians, and 25 percent of Western Australians use solar hot water, but only 6 percent of Queensland homes have solar hot water. Why? No one knows for sure, but over the years there's been little Government promotion of solar heating. In fact, Queensland has no Energy Information Centre, in contrast with other States. Over the past 20 years or so the Queensland Government has probably been too busy with brown paper bags to worry about trivial matters like renewable energy and the future of the planet. Maybe things will begin to change soon in the Sunshine State.

One night recently I was lounging around reading the newspaper and Camille read me out one of the many lovely letters we get from readers. Often people will write to say they've now made a big change of lifestyle, or planted their first vegies in the backyard, and we always love to read of plans and activities. Camille thought this one would go well in Earth People Write. The letter was from a bloke who'd: "... just moved out of the city with my partner, and she's in really good condition for a 20 year old." "What!" I said, throwing down my paper. "We can't print that — that's disgusting!"

Turns out that Camille had skipped a line in the rereading, and this poor slandered fellow had been speaking about his favourite Jersey cow. Occasionally, as editors, we worry about doing the same thing with a printed article but so far it hasn't happened.

Earth Garden readers are obviously a very understanding breed because we're yet to receive one death threat about cutting the magazine from six times a year to four. Quite a few people have said "we are disappointed, but we understand", so thank you for your support.

Happy reading,

Camille & Alan



Earth People Write

Letters to Earth Garden are always very welcome.

Pilbara Earth Gardeners making contact

Dear Earth Garden readers,

After reading Earth Garden since 1974 I have finally decided to put pen to paper and say hello to readers.

We (a family of five) live in Onslow in the Pilbara of Western Australia — a very hot, dry area which we love despite the lack of vegetation. Les has been here since 1957, myself since 1970. Our future plans are to build on an acreage here, either stone or mudbrick (out of giant abandoned ant hills). If any EG readers have used ant hills in this way could they please drop us a line.

We would also appreciate hearing from Earth Gardeners in the Pilbara region with the hope of swapping information and learning from each other about organic growing, building from natural resources and living in this vast, isolated area of Australia.

I feel there is a need for some kind of communication network or a yearly gathering of people who are interested in an alternative lifestyle, Aboriginal and herbal medicine, organic growing and the welfare of people and this delicate environment. Those interested — we would love to hear your thoughts and ideas. Regards,

Les and Helen Shanks, PO Box 139, Onslow, WA, 6710, (091) 846211.

Egg preserving

Dear Earth Garden,

Melt a lump of bees wax and add about one half quantity of vaseline and stir well. To use, put some on hands and thoroughly cover clean fresh eggs and

store in egg containers in a cool place. I have used eggs after six months in storage. If you don't like messing about try Whitfield's ointment which available at the chemist.

Richard Parkes, Walkaway, WA, 6528.

Waterglass source

Dear Earth Garden readers,

I'm just writing this letter for those who wish to obtain waterglass (the chemical name is sodium silicate) for preserving eggs.

The Prosana Laboratories in Queensland no longer stock waterglass. The only place that we have been able to get it from is Selby Anax of 352 Ferntree Gully Rd, Nottington, Victoria, phone (03) 544 4844.

It comes in a mix solution and the quantity you have to buy is 2 & 1/2 litres and the cost is \$38.60 plus tax, which is not cheap. The mixing rate for the powder (for those who have it) is approx 10 g to 200 ml of hot distilled water and I was told it is not easy to mix and takes some time. The other mixing rate they told me was to try 50 g to 200 ml: the mixture has to look like glycerin so I was told. I then asked if it is painted on the eggs or do you place the eggs in the solution. That was where I have run into a brick wall, so if anyone can help me I will be most grateful. Love to all,
Roslyn Askin, RMB 1715, Gooramadda, Victoria, 3685.

Cat-proofing seedlings

Dear Earth Garden,

Your readers may be interested in a method I have devised for 'cat-

proofing' newly-planted seedlings. Cats are attracted to the smell of freshly turned earth, which explains why they are immediately drawn to a garden bed which has been recently planted.

All animals, with the possible exception of goats, will keep to even ground and avoid obstacles. However, small seedlings are not seen as obstacles by the cat, who will dig its toilet holes in the newly turned earth, uprooting seedlings without even noticing them.

The problem? How to make a small seedling appear as an obstacle? Solution: plant four sticks, about 6 or 8 inches long, one on each side of the seedling, far enough away not to damage the seedling, but close enough so that they seem to belong to, or are a part of the seedling. When tested this method proved to be instantly, 100 percent successful. The cat still came to the garden bed to dig her holes, but was careful to avoid the obstacles and dug her holes in the rows in between. The plants did not seem to mind the feline fertiliser as they all thrived. When the plants are big enough to be seen as an obstacle in their own right, their protective sticks can be removed and recycled.

I have not tested this method on dogs, but I should imagine that it would work for small dogs. However, to be effective, the obstacle would need to increase in size according to the size of the dog. Yours faithfully,
M Bradshaw, Gladesville, NSW.

Neem tree correction

Dear Alan & Camille,

I am writing to you regarding my article on the Neem Tree, published

in EG 68, August/September 1989.

I understand from more recent reports that the timber of the neem tree is in fact not resistant to termites, nor is it resistant to borer attack. I wish to apologise for erring on this point in my article. Yours sincerely,

Edwina Toohey, Ravenshoe, Qld, 4872.

Wanting a rural life

Dear Earth Garden,

I'm someone, like many I expect, who would like to live off the land, away from the pollution and 'hecticness' of the big city living and secure a permanent base for myself. I'm in my 30s now and life's not getting any cheaper or easier. So the quest is really on to find a home of my own.

I'd really like to live with like-minded and sincere people who are not into any excesses. I'm resourceful and enthusiastic but of limited funds. I've learned to simplify my lifestyle and be happy with less. I wish I didn't have to consider buying into a property since I don't see the planet Earth being owned by anybody, yet that's the system I live in. I've made enquiries about living on a farmer's land but that seems fraught with costly legal implications. I've also discovered that in New South Wales at any rate, it's no longer possible to obtain a long lease of Crown land. I'm really born too late I think!

Anyway I won't be too disheartened. I'm intending to start in Tasmania this year. So if anyone down there or anywhere else can help, advise or support, I'd be pleased to find that little spot in this whole vast continent for the likes of me! With best wishes and thanks for an interesting magazine,
Barbara Hasslacher, c/- PO, Bega, NSW, 2550, phone (064) 940176.

Vital trees

Dear friends,

I must say that you have considerably added to the quality of articles and the interest in general in Earth Garden. I having been an Earth Gardener since the first issue, when Keith and Irene asked me to write an article. I was

then engaged in self-sufficiency in northern New South Wales, on 8 acres, with my husband. I have enjoyed and welcomed every issue. It is much harder to be self-sufficient here, in the semi-arid Mallee country, but I still manage to grow some vegies, lots of herbs, and protect the wildlife. The birds help to keep my plants healthy, and the wallabies love to eat them! I am still strictly organic, use no poisonous chemicals, and plastic mesh keeps the wallabies from eating the vegies.

I am truly grateful to you for your concern for forest and tree conservation, in your commitment of money as tree tax, to help in tree planting and conservation projects. Trees are life, not only to humans, but to all other living creatures, and when we destroy them we destroy all life on Earth.

Yet here, in a so-called Conservation Shire, we see landowners bulldozing or poisoning all trees on their land — marginal land, stony and poor soil, low rainfall, so they are gaining nothing but erosion — and the shire does nothing to prevent them.

Why is it that people do not value trees, but rather, seemingly regard them as enemies? We all learnt at school, in botany classes, that trees absorb carbon dioxide, and give out oxygen — this enables us to survive.

Quite apart from their value in preventing salinity and erosion problems, which are very serious in this Central Victorian area. But no official person (Shire, or Government Conservation Department) prevents men from felling trees on private land, public (State forest) land, or roadsides. It is very disheartening, when the survival of all life on Earth is now so seriously threatened by the activities of one species — man.

Well, you are doing your best in this sorry situation, and I am truly grateful to you. Would you please accept a small donation towards your expenses — ie \$573 year subscription, \$43 donation, as an expression of my appreciation! Yours sincerely,

Barbara E Salter, Inglewood, Victoria.

Dear Barbara,

You will be pleased to know that there have been legislative changes in Victoria since you wrote to us. Now people with private property have to obtain a permit if they want to clear large tracts of forested land. As a stop-gap measure it is a first step towards reversing the fact that tree clearing by farmers continues to destroy more trees each year than are planted by individuals, governments and tree planting groups.

Thank you for your generous gift. We ummed and aahed long and hard about whether or not we could accept such a generous donation, and have used it to buy 100 eucalypt seedlings which we've planted along a boundary of our block.

—Camille.

Advanced solar projects, right here

Dear Earth Garden,

With all due respects to Bill Clark's article Solar Ideas for Australia, in EG 69, I can see that he has not done much research into solar energy projects in Australia. Here in the Northern Territory there are quite a lot of projects going on in solar work.

Namely Australian Solar Ponds, which have been going for a number of years and are funded by the Commonwealth and Territory Governments, with all machinery redeveloped by the owners Mr Bob Collins and Mr David Frederikson.

The spinoffs from the solar pond project are a generating unit set up for Mulka Station using the hot water bore to do the job that the salt pond does, and now the South Australian Government has commissioned the company to build a power station for Birdsville using the same technique of hot bores. This has all had national and commercial TV coverage. Also, the Territory is 90 percent solar hot water on all houses and flats, and the power and water authority give a 10 percent rebate on the cost of replacing your old electric hot water unit with a solar unit.

Regarding solar air condition-

ing: the old Alice Springs Hotel was one of the first to try it and it was successful to a degree (probably because it was an early unit), but it worked. The other thing that is here in the centre is the original John Flynn Hospital, now Adelaide House, and he had natural air conditioning using draught and convection. This was using a cellar with an opening to the fresh air at one end and an opening in the floor at the other end. The building is designed so that the air is sucked through the cellar (where wet bags were suspended) and then through the building, keeping the place cool.

The other project is a Solar Village in the Top End of the NT which is experimental but also working — these have also had national TV coverage.

I am writing this to let you know that there are projects, some old, some new, here in the NT that people seem to miss in the media coverage.

We also have a pilot project patented by an engineer here in the Alice. Power lines were put over a bore so the property owners could not put up a windmill. Mr Joseland built a hydraulic unit, put up a windmill away from the bore and power lines, and now the windmill drives the pump, which drives the hydraulic motor to pump water.

There is also an extension to the TAFE College called The Centre for Appropriate Technology. This section has developed hand operated washing machines, a ventilated pit latrine (no smell, no flies), solar header pumps which fill a header tank during the day, and which can keep pressure for the house etc. Solar street lighting, solar distilling of water (which is supplied to the outback medical units), solar chargers for medical equipment and simple shower facilities and hot water units have also been developed. Everything is made in such a way that low maintenance and simplicity is the key.

I do not wish to upset Bill Clark but I get a little uptight when I read about what is going on overseas when it is also being developed here in Australia. Yours faithfully,

Kevin Hollioake, PO Box 240, Alice Springs, NT, 0871.

Dear Kevin,

Thank you for your wonderfully informative letter. I think you have every reason to feel a little uptight. The problem is mainly our fault, as editors, for not knowing of some of the projects you have described. It is often difficult to stay informed of research projects, but we apologise, and would love to visit some of these places in the future and write about them for Earth Garden.

—Alan & Camille.

Conflict in Alternatopia

Dear Earth Garden,

Five years ago, we moved out to our place in the bush, full of hopes, plans and ideas after ten years of reading Earth Garden and similar literature. So five years on, how is it all turning out?

One of us (the author) is having much trouble with many internal conflicts which have surfaced during this time. Here are some of them.

Live simply so that others may simply live, has been my basic philosophy for a long time. But increasingly I wonder why I bother when so much of the rest of the population doesn't seem to give a damn. Another of my strongly held ideas is that if one owns land, one should try to make a living from it, and not rely on Government supplements. In the last financial year, our farm income was not very much, and the government supplements at least equalled the farm income.

The remainder of our income is derived from interest on money invested. However I consider the current high interest rates to be iniquitous. They are making it hard for many in our communities to simply live. Is it my concern? One of our goals was a large measure of self sufficiency for power, water, housing, food and education. Discrepancies between the goal and the actuality are another source of conflict.

Power

Our solar power installation was designed to supply lighting, refrigeration, and power for a few small appliances. It failed badly during the prolonged wet weather of the first half of 1989. A slow combustion stove has

served admirably for cooking, hot water and heating, along with a Hot Drum at the other end of the house. We will always be dependent on petrol for a vehicle and small farm machinery.

Water

We have water in abundance! (much of it has been in the wrong place for a lot of this year, though).

Housing

Our house, built from bush timber, river rocks, concrete, galvo and recycled windows, and with our own labour, reached the lock-up stage some 18 months ago. We moved in, with temporary arrangements for dividing walls, cupboards, bathing etc. Since then, there seems to have been little time to continue with completion of the house. Or perhaps priorities have changed?

Food

For a while, food self-sufficiency became almost a reality — we had milk, honey, eggs, peanuts, meat, plenty of vegetables and some fruit. Two years of unusually wet late summer/autumn weather have cut this back considerably. The cow aborted; reduced refrigeration meant we couldn't kill a sheep regularly; crops did not grow so well. If the Greenhouse Effect is a reality, this is how things may continue.

Education

Our girls are now aged nine and six. The older one started school on Correspondence. After about a year, I switched to Home Education. Once the younger girl had passed through the kinder year, the preparation of two sets of lessons became very time consuming, so this year, we have re-enrolled with Correspondence. In addition, the girls have learnt a lot about animals, farm practices and bushcraft. However, they have very little contact with other children their own age. Are we doing the right thing by them?

It is nice to think that given reasonable conditions, farm animals will look after themselves, thrive and produce. We acquired a varied collection of critters, many of them being other people's rejects. Due to a combination of natural causes and our mismanage-

ment, many have died. I have found these deaths very distressing, and wonder why we bothered with many of the animals at all.

There is another factor to the self-sufficiency equation: the social factor. The other senior member of this establishment seems content, most of the time, with his own company and his books etc. The author, however, needs more company, particularly the company of other women, for friendship and sharing. The weekly trip to town to collect mail and do shopping, and monthly CWA and Spinners and Weavers meetings provide very short term company, and are hardly conducive to developing friendships. Even nearest neighbours are either five kilometres away, or nearly an hour's hard drive in the other direction, so popping in for even a quick cuppa is difficult.

There are probably many other areas of conflict, but I will list one final area generating major conflict: the idea of one's role in the wider community. The community (via taxes) paid for my many years of education and training in several fields: I feel I have not yet repaid the debt. Initially, I did not think this would worry me, but now have come to the realisation that my education and training, my various skills and abilities are being vastly underused, and could be being put to better use out in the community.

That's probably enough for this letter. Have other Earth Garden readers experienced some or any or all of these conflicts? Or different ones? Have you managed to resolve them? If so, how? If not, how have you come to terms with living with them?

Irene Davey, PO Box 46, Urbenville, NSW, 2475.

Indian truths

Dear Earth Gardeners,

I found this in a 1983 copy of the Cuckskin report. I love it and thought you would too. I know it's American but it's so true.

A farm magazine printed a picture of a deserted farm house and offered a prize for the best essay on the effects of

erosion.

A Spokane Indian wrote:

*Picture show white man crazy
Cut down trees
Make too big tipi
Plough hill
Water wash soil away
Grass gone
Deer gone
Squaw gone
Whole damn place gone to hell
No pig
No corn
No pony
Indian no plough land
Keep grass
Buffalo eat grass
Indian eat Buffalo
Hide make plenty big Tipi
Make Moccasin
Indian have plenty to eat
No work
No hitch-hiking
No ask relief
No build dam
No give damn
White man heap crazy.*

All the best,

Carolyn Burgess, via Armidale, NSW.

Canberra building helper

Dear readers,

Over the past year I discovered Earth Garden and have used it continuously throughout my Architectural Drafting Course, of which I have completed three quarters. Through this course I unearthed my interest in alternative style building techniques. Now I would like to turn my passive interest into practical hands-on experience.

I live, study and work in Canberra and wonder if there is anybody who needs a willing enthusiastic helper and problem solver, in return for practical experiences in building your alternative style home. I am interested in pole, pisé or earth construction using natural resources. Please contact me by phone (062) 575110. Looking forward to hearing from you,

Margaret Roden, PO Box 5, Bungendore, NSW, 2621.

Finding 'Silent Spring'

Dear Earth Garden,

Thanks for an inspiring magazine of which I have been an avid reader since issue number one. I was really impressed with Liz Sinnamon's story in EG 70, to the extent that I have started reading as much as I can lay my hands on regarding pesticides. Unfortunately I can't find a copy of Rachael Carson's 'Silent Spring'. If any readers can help please drop me a line. I will answer all letters.

There are too many books on pesticides in the libraries to read them all. I especially need help to wean myself off junk food, and get some energy to grow my own food. Good luck in 1990. Regards,

Terry Sloan, Princes Highway, Yallah, NSW, 2530.

EG on recycled paper?

Dear Camille and Alan,

As everyone who reads your magazine has a concern for our environment could I please suggest you inquire about the use of recycled paper. Many groups and publications are now doing this. Even as Secretary of our local branch of the Wildlife Preservation Society of Queensland our small group only uses recycled paper. The price will only decrease if we all use it. Please consider this. Thank you for everything else. Love and best wishes,

Wendy Shanley.

Dear Wendy,

You have given us an opportunity to explain something of the way EG is printed. (By the way, Wendy wrote to us on the most exquisitely designed and printed recycled paper — a pleasure to read!) Smaller circulation magazines and newsletters can now use recycled paper because it is available for 'sheet-fed' printing: because the publication has a relatively small print run it is printed on paper already cut to size (or A3 and then cut). Unfortunately, Earth Garden's circulation is such that we are printed on a 'web' printing machine: one long continuous reel of paper (a la the Hollywood shots of newspapers

being printed), which is then cut after printing.

We are extremely keen to print on recycled paper when it becomes available for web printing, and we are getting very close to that day. We have had our printer trying different experiments and we very are confident. It will be easier for magazines such as Earth Garden with relatively large print runs to switch to recycled paper smoothly because recycled paper of the glossy kind is a very long way off — another reason we're happy to have stuck with newsprint.

In our office at Earth Garden we use recycled paper for all our stationery and letterhead, as well as the address sheets for our subscribers' home delivered copies, our subscription renewal forms, and literally anything else we can possibly have printed. For over three years now we have recycled every envelope which comes into our office and have foregone the nice image of personalised, printed envelopes in favour of recycling labels and reused envelopes. Every scrap of waste paper, newspaper and cardboard is also recycled, and you can be sure that we are making our voices heard loudly, through our printers, in demanding good quality, recycled newsprint from the paper manufacturers.

—Alan & Camille.

Tailor's patterns anyone?

Dear Madam/Sir,

Does any reader have Folkwear patterns from Murr Made Tinker Tailor, who are no longer in business? If anybody has the 1987 catalogue I would also like to see that. I will pay costs if anyone sends me a list of the patterns they have. I am willing to pay for a pattern or tracing and photocopy of instructions for patterns. I hope someone can help me. Keep up the good work.
Veronica Kidner, PO Box 398, Cairns, Qld, 4870.

Recapturing the bush adventure

Dear readers,

I really enjoy reading the stories

about other peoples experiences. I have been an Earth Garden person since the 1960s and now, in my early 50s the farm having been sold, I live in the Gold Coast Hinterland.

I still have a beautiful vegetable garden but after 30 years on the property, I'm missing that lifestyle very much. I didn't realise how wonderful it was until I left. Milking 80 Jersey cows, having stud pigs and another time running a goat dairy, clearing the land, fencing, planting thousands of trees both for cattle fodder and shade. Building steel cattle yards, sheds, cement tanks, handling the cattle, renovating paddocks on the dozer and mechanical repairs. I realise I cannot work like that today. How can I get that achievement and satisfaction? Maybe it's the environment here — I was never lonely in the bush.

I must grow vegetables for a special diet. Perhaps I could live on a property and do odd jobs, or I'd caretake. Maybe a companion/help or I'll buy a 40 ft bus and go around Australia, complete with wheat grass, sprouts and vegetables in pots. For this I'd require a couple of extra persons. Any suggestions or ideas would be greatly appreciated. Yours sincerely,

Joan Porter, 25 Veronica Dve, Tallai, Qld, 4213.

American Indians and British tribes!

Dear Camille and Alan,

Earth Garden 70 arrived yesterday, and I have written away to the rare book finder from WA who advertised, to see if he can find me the book written by Sun Bear of The Bear Tribe in USA that was mentioned in a letter in the same issue. But details of how to obtain a copy were not given. Also I asked him to find me a copy of Lemon Magic which I have tried to obtain several times over the years.

In Sophie's article about woad her description of turning the leaf into a dyestuff powder seems too complicated to me to have been the method used by the ancient Britons to paint themselves before going into battle. I doubt they

would have had the organisational facilities to do such complicated work in Britain in 55 BC, which was when the Romans reported the blue colour of the British tribesmen.

They said it was done to make them look fierce. I think it just as likely it was camouflage and think it more than likely that all they did would have been rub the leaves on their skin. Sophie did not say if picking the leaves stained the fingers, you might ask her . . . Yours faithfully,

John E Guest, 172 Alma St, Rockhampton, Qld, 4700.

Dear John,

Thanks for taking the trouble to write. My article on the history of dyer's woad did not refer to that very early period when the tribespeople used woad as body paint to frighten the Romans! It referred rather to the very long period in the Middle Ages when woad was a very important industry, mainly in the South (the Occitan region, near Toulouse) of France.

This period spanned about 250 years from the end of the 13th Century, and in that time the woad industry was the mainstay of the region. People got very rich on it! It's at this time that the process described in my article was developed. It sounds complicated — but when you've got an entire region geared to production, it was the best one they could organise, yielding lots of dye. I got all my information from France, from Toulouse in fact, where there's a wealth of information on the period, the woad industry and the dye-making process. I hope that answers your questions. Sincerely,
Sophie Masson.

PS. Picking the young leaves does not stain the fingers — but the seeds do stain, when they're young.

**Earth People
Write is continued
on page 52.**

The Natural House

The Natural House' — creating a healthy and harmonious living environment — is the subject of a new book published by Collins Australia (see EARTH GARDEN REVIEWS for more details).

by John Archer

Brunswick Heads, New South Wales.

*"Would I a house for happiness erect,
Nature alone should be the architect."
—Horace, Odes, Book 1, 20 BC.*

THE philosophy of the natural house reaches back to a time when our homes were a functional part of the ecosystem — built of local materials, using local energy and creating little waste. Before the invention of synthetics, houses were made entirely from the materials at hand: walls of stone, rammed earth, mudbricks or timber. Furniture was fashioned from timber and natural fibres like wool and cotton were used.

The designers of ancient cities had an understanding of natural principles. The Greeks made access to sunlight a legal right, planning the city Olynthus so that this was freely available to all. On the other side of the world the Acoma Indians created the 'sky city' which ensured the 'sun rights' of all who lived there. They built with adobe which gave insulation against the hot summer sun, slowly absorbing its warmth throughout the day and releasing it at night.

"Concern for healthy housing has a long history, too," says David Pearson, author of *The Natural House Book*.

"Evidence from ancient cities, such as those built by the Sumerians, or in the Indus Valley, and by the Egyptians, Greeks, and Romans, indicates a developed and sometimes sophisticated understanding of health and comfort. Piped water, underfloor heating, steam rooms, courtyards cooled with pools and fountains, and gardens of medicinal herbs all existed. Most of this earlier knowledge was lost in Europe in the Dark Ages after the fall of the Roman Empire. In many other cultures it remained a continuing tradition, from thermal baths in Japan to the sweat lodges of the North American Indian."

Unfortunately today's houses bear little resemblance to those of earlier times. Not only does their design isolate us from our surroundings, but most contain an astonishing variety of unhealthy materials. These include highly toxic chemicals contained in paint, vinyl wallpaper, particle board and synthetic fabrics used for clothing and furnishings.

Many of these substances are volatile organic compounds (or VOCs) and they readily release vapours at room temperature. Add to these the vapours given off by polishes, detergents, carpet cleaners, air fresheners and hair sprays, plus the carcinogenic chemicals used for pest control both inside and outside the home, and you have an unhealthy cocktail which may be further heightened by cigarette smoke and car exhaust fumes.

While each of these substances may only be present in minute amounts the cumulative effect can be significant enough to cause headaches, dizziness, nausea, loss of appetite and allergic reactions like sore eyes, rashes and asthma.

The air we breathe, the food we eat and the water we drink — our essential requirements for life — are often polluted. Not only are our homes high consumers of valuable resources, they also generate vast amounts of toxic waste which eventually enter the natural environment. This pollution means that we are constantly in contact with substances that were not present during our evolution and which our bodies have never before encountered.

No wonder we feel off colour now and then.

Growing reaction

However there is a growing awareness of the problem. As we become more environmentally conscious the demand for healthy homes increases. In German speaking countries for example, the concept of Baubiologie (building biology) is becoming popular. The house is treated as an organism which interacts with us and our planetary environment, our 'third skin'. The 'breathing' effect of this outer shell can add significantly to the air exchange with the outside. One important form of natural ventilation is the diffusion of air through porous building materials like stone, timber, brick and plaster.

Baubiologie teaches a gentle art of building which brings balance and harmony to Nature, people and buildings. Materials are handled with sensitivity, paints and finishes are organic, and colour and light are used consciously to promote health. It recognises our deep desire to dwell in a place of comfort and healing, a place where we feel in harmony with life. By combining a scientific approach with a wholistic view, it's possible to design and build homes with materials, fabrics, colours and scents which create a healthy, harmonious home environment.

Now is an appropriate time to reassess our attitude to

the environment as reflected in our homes. The very word ecology is derived from the Greek *oikos*, meaning house. By developing such a consciousness we recognise that we are both totally dependent upon, and an integral part of Nature.

As Aldous Huxley observed:

“Modern man no longer regards Nature as being in any sense divine, and feels perfectly free to behave toward her as a conqueror and tyrant. . .”

It's time to reaffirm the divinity of Nature. As we grow to respect the world around us, so peace and happiness begin to replace fear and alienation in our lives. Health, conservation, and harmony are the three principles which are necessary to create a natural home. It should be pleasing to all five senses, combining wisdom and practical knowledge.

Design for harmony with the planet

A home's relationship with the landscape is important. A building can be constructed so that it supports the natural ecology — the vegetation, water and wildlife — or it can be destructive and damaging. Use natural products — nontoxic, non polluting, sustainable, and renewable. Site, orient, shelter or adapt the home with sensitivity to the character of the local environment. Consider the ecology of

the site, its soil type, groundwater, flora and fauna. Plant indigenous trees and flowers. Make the best of the natural 'soft energy' resources of sun, wind and water. These are practices which date back to earlier times.

Design for peace for the spirit

Our homes can be healing places for the body, mind, spirit and the planet. Light, colour, scent, sound and water can all be therapeutic when incorporated into home design and decoration. Colour and light hold healing and rejuvenating properties. The Egyptians diagnosed illnesses as being partly due to colour imbalance and the patient was treated by bathing in the deficient colour. Colours react with the body and mind as we absorb them physically through food, drink, our eyes and skin and in our breath, and mentally by meditation and imagination.

The colour and texture of natural materials like timber, stone and earth combine with natural fibres and fabrics to create a soothing, harmonious effect. Timber for example comes in many colours, grains and textures (remembering to avoid all endangered tropical species).

Aroma is also an important part of the natural home. Only recently have artificial fragrances replaced natural products. Once herbs, pot-pourris and pomanders were used



An appealing combination of poles, mudbrick and a shingle roof on this pole house in northern New South Wales.

to fill a house with sweet fresh fragrance. Unfortunately they have been replaced by an ozone damaging aerosol, its chemical contents masquerading as a poor excuse for natural scent. Essential oils can be used for their relaxing and soothing qualities in the bath, pot-pourris, candles and soaps, or they can be used in a vaporiser ring on a stove or lightbulb.

Sound, which has such an effect on the mind, the body, and spirit — the sounds of Nature, the song of the birds, the rustle of wind — evoke feelings of tranquillity and well being. Thus the natural home has gardens which encourage wildlife.

Design your home to be aesthetically pleasing, its forms and shapes blending with its surroundings, promoting life in harmony with the cycle of sun and moon. Our natural rhythms of sleep are influenced by the sun, so orient your bedroom to dawn or dusk to suit your particular pattern. A skylight open to the moon, stars and the sky is another way to enhance any room in your home.

A natural house is a haven where you can relax and feel at peace.

Design for health

Create a safe and healthy home using natural air flow free from pollutants, and allow your home to breathe. As Dr Alfred Zamm, an American physician and clinical ecologist says, "... if you can't eat it, don't breathe it". Design your home to admit as much natural light as possible so that there is less need for artificial lighting. Assess the water quality, as filtration-purification may be desirable. Water is a symbol of life. Breathing clean air, drinking clean water, and increasing daylight at home help to revitalise body and mind.

Choose natural materials wherever possible. Timber is one of the healthiest building materials because wood is a natural regulator of the indoor climate. It 'breathes' and assists ventilation, it stabilises humidity and filters and purifies the air. It is warm to the touch and absorbs sound.

When building, site the home away from the radiation of power lines and away from ground radiation. Some ground rock may release radioactive radon gas. Learn as much as you can about the nature of your building site.

Garden

The garden is a world where Nature can flourish if we understand her magic. Organic gardening is the path of the future, healthy and chemical free. An organic gardener learns to understand the nature of the soil, and appreciates that it is a living, breathing organism of wonderful complexity. One which needs to be replenished and renewed, not sprayed with pesticides. By poisoning our food sources we

endanger ourselves, our cohabiters of Earth, and the environment. Within our 'green-scapes', our gardens, there is a rich, natural world of subtly changing light and colours, with the scent of plants and flowers enhancing the air, and the sound of the wind stirring our senses. Here we can create a sanctuary where there is peace and a feeling of connection with Nature.

Enhance existing homes

While it would be ideal to have the opportunity to design and build a natural home, you don't necessarily have to move house to experience some benefits. Whether renovating, or making a simple household purchase, look for natural products, fibres, and materials, gradually replacing all synthetic items with their natural equivalent.

Take a fresh look at how you use your house — the bathroom for example. A natural bathing space should be

soothing to the senses, offering health, intimacy, relaxation and cleanliness. Soaking in a tub of water is deeply relaxing, arousing feelings of tranquillity, that can be shared with other family members. A luxuriant bath can be a sensuous experience, with the addition of herbs and essential oils, heightened to absolute pleasure with candlelight and music.

The bathroom should ideally have a closer relationship with the greenspace or a view over a secluded garden. Introduce moisture-loving plants like ferns, soothing colours, fragrances and natural materials to create a healing, relaxing space. Similarly, rethink every room in your home.

Simple changes made to the materials and furnishings will help support a healthier conserving lifestyle. Health for the body, peace for the spirit, harmony with the environment. This is the philosophy of the natural house. Although it sounds simple, it sometimes seems difficult to achieve.

"As we live and as we are, Simplicity with a capital 'S' is difficult to comprehend nowadays. We are no longer truly simple. We no longer live in simple terms or places. Life is a more complex struggle now. It is valiant to be simple; a courageous thing to even want to be simple. It is a spiritual thing to comprehend what simplicity means."

—Frank Lloyd Wright, *The Natural House*. 1954.

Our homes can set a new style for living, a new standard of design for health, ecology and spiritual wellbeing. We can begin to re-establish the true connection between our living spaces and our environment.

When we see our actions and our dwellings as hymns to the universe, then we cannot help but build, with joy and beauty, houses that are truly creations of love. What could be more natural?

Certified organic produce

NASAA is a coalition of community-based Australian organic groups. The National Association of Sustainable Agriculture Australia aims to promote organic agriculture. The main activities of this non-profit group are to educate the public about organics and to teach farmers how to grow organically. NASAA is active in all States of Australia, and is currently establishing a national scheme for certifying organic farms. Sandy Fritz, from NASAA, believes that Australia is catching up quickly with other countries, such as New Zealand, in structuring the organic growing movement.

by Sandy Fritz

Kangaroo Valley, New South Wales.

IN THE past 18 months there has been a strongly growing interest in organic agriculture. Farmers want to produce food organically and more consumers want to buy organic produce.

What exactly is organic agriculture? Many people are still unsure of its definition. Once defined, NASAA has been able to begin certifying products which have genuinely been grown this way. The process of certification, to differentiate between conventional and sustainable agriculture is described below.

Definitions of sustainable and organic agriculture

NASAA defines sustainable agriculture as a system of agriculture able to balance productivity with low vulnerability to problems such as pest infestation and environmental degradation, while maintaining the quality of land for future generations. Many people see it as a system of agriculture which does not *degrade* the natural biological balance of soils, but which *maintains* a healthy environment.

In practice this involves a system which avoids or excludes synthetically compounded fertilisers, pesticides, growth regulators, live-stock feed additives and other potentially harmful substances. It includes the use of systems such as crop rotations, mechanical cultivation and biological pest control; and

such materials as legumes, crop residues, animal manures, green manures, other organic wastes and mineral bearing rocks. Organic agriculture is one type of sustainable farming. It is also one of three grades NASAA uses in certifying produce.

Standards and certification

Consumers, farmers and traders benefit from a system of identifying genuine organic products. Currently in Australia any product can legally be marketed as organic. Also, consumers cannot differentiate between products of conventional and sustainable agriculture by looking at the product.

So some method of identifying genuine organic products is needed. Consumers benefit by receiving the quality of produce they believe they are paying for when they buy organic products. Farmers benefit by having their methods acknowledged and receiving premiums for their produce. Retailers believe that certification is their protection for credibility in selling products called organic and it is a means of supporting consumers' rights.

Dual purpose for standards

It is generally agreed, in Australia and overseas, that

production standards are the best method of determining whether produce is organic or not. The other alternative is to base quality control on the end product (for example, testing food for chemical residues). But this alternative does not evaluate what is actually happening on the farm and how sustainable the



agricultural system is. So it only serves one of two desirable purposes of sustainable agriculture, to promote sustainable agriculture and to provide healthy and safe food.

International standards vital

Standards are also important at the international level. In 1988 the EEC directed its member countries to prepare to regulate the production and marketing of organic produce in the following two years. It appears that the standards which the EEC will adopt are the organic production standards of IFOAM (the International Federation of Organic Agriculture Movements).

IFOAM is developing an international directory which contains an evaluation of production standards and farm certification systems of the countries listed. This directory will be published soon. Buyers will use the directory in their selection of organic produce in the international marketplace. Even now NASAA receives not only enquiries from overseas about the available supply of organic produce but also about the farm inspection and certification process. So it is evident that production standards will become increasingly important if not required for international marketing of organic products.

The question then arises: who sets these standards and how is quality monitored?

Standards established and monitored

The NASAA Standards for Organic Production were adopted in March 1987. They are based on the international production standards set by IFOAM.

In most countries organic standards have been established by, and are administered by, non-government organisations without a vested interest. This is usually a national body representing organic and other sustainable farming groups and producers. IFOAM views this as an important aspect of any certification scheme.

In a number of countries governments are involved to varying degrees. One example is New Zealand, where the organic standards and their administration have been handled by the NZ Biological Producers Council (BPC) since 1984. The BPC is a non-government organisation representing organic groups and producers. Following negotiations between the BPC and the NZ Government, the Government will now be participating in the standards and certification system to increase the numbers of farmers involved. The BPC will retain final control of the label.

A different example is the United States where a number of States have legislated a definition for the term 'organic' based on production methods. This is of great help because products cannot be marketed as organic which do not meet the legislated standards. However the legislation does not include any system of monitoring production. It is the non-government organisations involved in the organic movement at the State level which do this.

As well as production standards, some form of

marketplace monitoring is necessary to prevent substitution of low priced conventional products for higher priced organic products. There are examples of control in marketing:

a. Some certification systems include safeguarding aspects such as giving each certified farmer a number and using this number on the package and label.

b. In the United States there is legislation covering the wholesaling and retailing of organic products which requires sellers to keep records of the source and volume of organic produce they handle.

But in general, quality control in marketing is an area where more work is needed. In Australia the Organic Retailers and Growers Association of Victoria is presently working on retailing standards.

The three NASAA classifications

There are three levels within the NASAA farm certification program. Each is briefly described in this section. Written standards are available (\$5 per copy) for people seeking greater detail.

Level one in organic. These standards do not permit the use of any synthetically compounded fertilisers or pesticides. In the place of such inputs these standards suggest what acceptable organic practices may be used.

Level two is called Conversion to Organic. The standards are the same as for organic but this grade is applied to farms which have only recently adopted these practices.



The Seed Savers' Network

"Before hybrid vegetables are all that's left please help us maintain locally adapted strains for your area."

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The Seed Savers' Network, PO Box 105,
NIMBIN, NSW, 2480.

"Preserving the Genetic Basis for Tomorrow's Food."



Level three is called Sustainable Farming. These standards were adopted in March 1988. This certification is intended for those farmers for whom total organic methods are not possible at the present time. This includes farmers who are doing all they can to develop a sustainable agricultural system but who, for various reasons, require a limited amount of synthetic fertilisers or pesticides. The requirement for the chemicals may be due to a statutory regulation or certain problems for which satisfactory non-chemical control methods are not available. Exactly which chemicals are permitted under this grade is limited, as well as how the chemicals may be used. Examples include the limited use of glyphosate until a longer-term weed control program is established; and some fertilisers which may be used until a longer-term soil fertility system is effective.

NASAA's farm inspection and certification system

NASAA is reviewing production standards and also the inspection and certification system. For some time now there has been serious consideration given to adopting an inspection service which entails greater cost recovery. Due to the growing demand for certification the following costs may change:

The farmer completes the application form attached to the standards and sends this to NASAA with the \$700 farm

inspection fee. Small farmers (gross income less than \$50,000) pay a \$250 farm inspection fee. On receipt of this the farmer is sent a farm questionnaire to complete. This questionnaire covers the practices used on the farm to date and includes a Statutory Declaration to that effect for the farmer to sign.

A farm inspector is then selected on the basis of expertise, location and available time. The farm questionnaire is sent to the inspector and provides the information about the farm before inspection.

The inspector plus one other person make an appointment to interview the farmer and inspect the farm. The inspection includes all aspects of farm management such as the soil fertility program, weed and pest control, animal husbandry, marketing and finances. Soil samples are collected to be tested for residues of organochlorine pesticides. At least one test is required.

The inspector prepares a report and sends this to the farmer for confirmation regarding the accuracy of the report in its description of the farm practices used.

When the farmer's signature on the farm report is obtained the inspector sends all papers with their recommendation to the NASAA Standards Committee (NSC). The NSC reviews the report and the soil test results and either confirms or alters the recommendation.

Once certified the farmer signs a contract with NASAA. This contract states certain obligations for both parties. For example the producer must notify NASAA if any changes occur in farm practices or if the crop is accidentally contaminated. On its part NASAA will, for example, lobby governments on behalf of organic growers.

The producer agrees to pay NASAA a licensing levy to use the NASAA label. The levy is used to cover the cost of promotion and future farm inspections. The current levy is approximately one percent of gross income on organic production.

The producer may purchase labels from NASAA or incorporate the NASAA label on their boxes or bags.

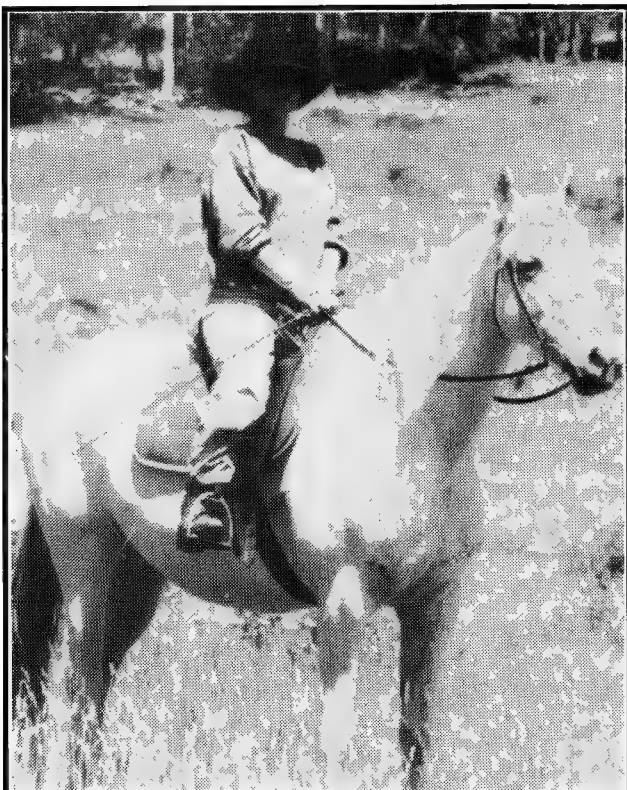
By February 1990 NASAA has received over 250 applications to join the scheme, conducted around 200 farm inspections and approved approximately 180 properties in all States. The number and the rate of applications submitted are increasing.

References

NASAA 1987. *Standards for organic produce*, National Association for Sustainable Agriculture Australia Ltd, Sydney.

Wynen, E and Fritz, S (1987). *Sustainable Agriculture: A Viable Alternative*, Discussion paper no 1 published by the National Association for Sustainable Agriculture Australia Ltd, Sydney.

•NASAA can be contacted at PO Box A366, Sydney South, NSW.



Fancy a trail riding holiday among East Gippsland's magnificent National Estate and National Park forests? Stay in pioneer bush slab cottages and enjoy hearty home-cooked meals. For details, write to Jill Redwood, RSD Goongerah, Victoria, 3888.

Build your own fret saw from old sewing machine parts

by Syd Oats

Beaufort, Victoria.

YOU can build the fret saw shown here using the motor, flywheel, reciprocating arm, and part of the main shaft from many types of old sewing machines. I have been using this saw for about five years. I've been able to cut quite intricate patterns in plywood, plastic and metals. I have cut soft materials up to a thickness of 30 mm. The saw has a throat depth of over 40 cm so it has plenty of scope for cutting large patterns.

The two arms of the saw are made from 15 mm diameter square tubing, and the upright needs to be made from a very hard wood, or steel tubing.

The shaft is cut to 15 cm, and the flywheel and reciprocating arm (the part that drives the needle up and down) are added with two bearings. The belt goes over the flywheel and down to the motor. The bearings are fairly inexpensive pressed steel pillow blocks with collars that lock the bearing to the shaft-making assembly very easily.

They are also sealed to keep the dust out. The bearings are obtainable from Action Bearings, Francis St, Brooklyn, Victoria; telephone (03) 314 2311.

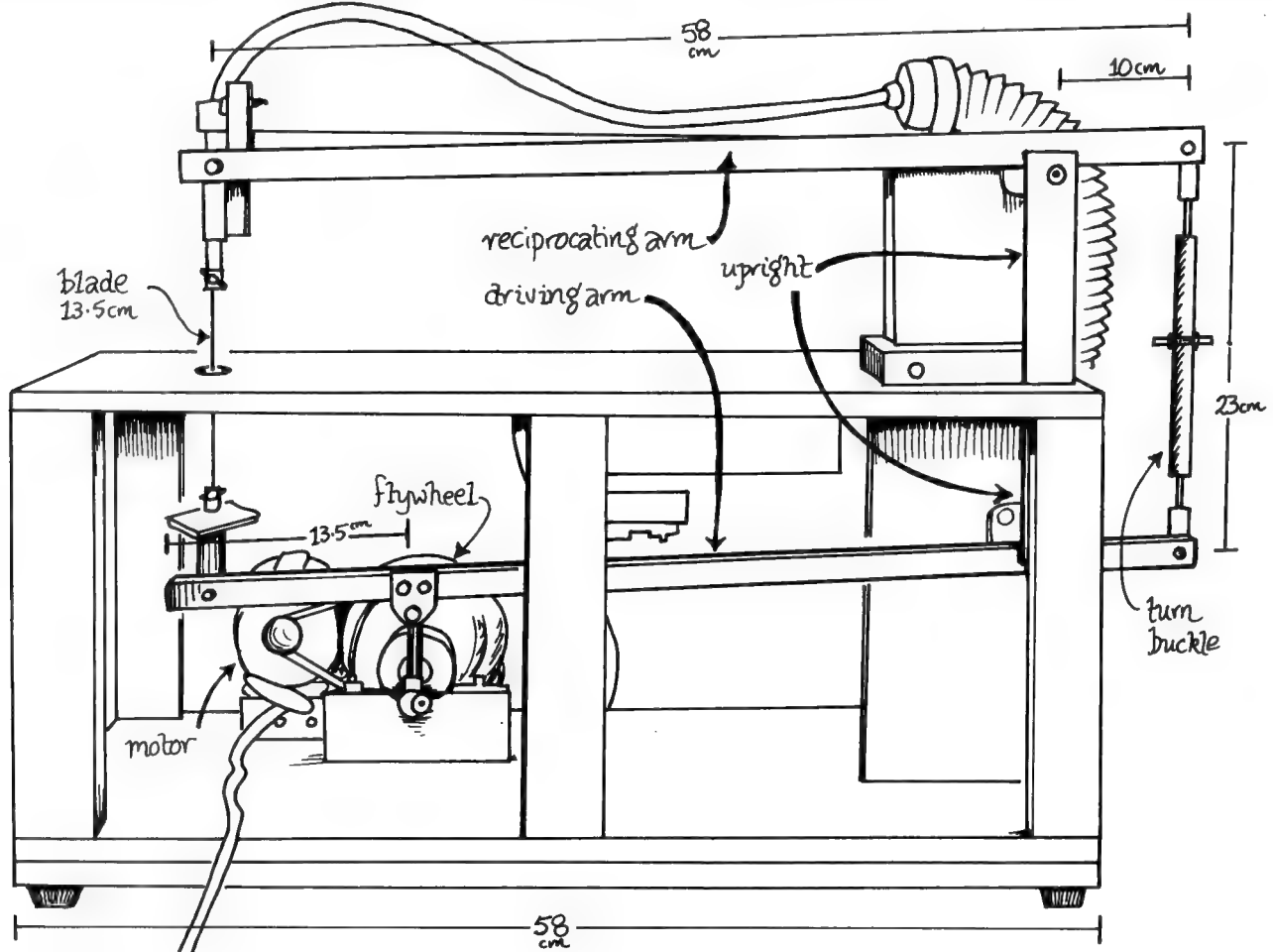
The jaws for holding the blade are made from a hand fret saw cut off and adjusted so that a 35 cm blade fits.

The (sewing machine) foot peddle is used to control the speed of the motor and blade. The light can be fitted above the blade. On my fret saw I blow the dust away with an old hair dryer (the type that has a tube and a bag) which is very quiet.

Fretsaw blades can be hard to obtain and very expensive. I get mine from the UK from Hobby's Ltd. They publish a magazine annually and blades are only 10 cents each. The address is: W Hobby Ltd, Knights Hill Square, London SE27 OHH, England.

All measurements are in cm. Unless stated all are within 2 mm as taken from the saw in the illustration. Although these measurements worked fine with the parts I've used, some may have to be altered to suit the parts from other machines.

Best of luck, I hope you can use this project.



A concrete adventure

by Mary Dudman

Bundaberg, Queensland.

EARLY morning. A mist hovers over the land promising yet another beautiful Queensland day. Soon the river will be sparkling in the sun, currawongs will perform their morning concert and another busy day on the land will begin.

This takes me back to the time two months ago, shortly after arriving on our 28 acre block — our rural paradise — when it was another early morning and we were awaiting the ready-mix truck. Rob and I had prepared the formwork around a rectangle 20 x 30 feet, levelled it, placed wire mesh down and covered it over with a layer of sand. We planned to put our campervan and garden shed on the slab while we built our dream house.

At 8:30 am the truck duly arrived. The concrete mix poured down the chute onto various sections and we started to shovel. The concrete kept pouring, and we kept shovelling. Backbreaking work and we'd only been going 15 minutes! Shovelling and spreading, raking and shovelling, great lumps of concrete staring at us all over the place.

We'd expected the concrete to arrive in two loads, but no, it all came at once. It seemed endless. The driver washed the chute, gave us a cheery wave and a "Good luck mate", and was off. The day before we'd been practising tamping and screeding, working together in a ritual forwards and backwards movement to smooth out the concrete, quite a gentle motion until you are actually confronted with a solid mass of gravel, sand, cement and water.

We tamped down, screeded from side to side and then realised with horror that we were running out of water and we'd only completed a third of the slab. Our property fronts the Burnett River, which is our only water source, but at this stage we had no way of getting water up apart from a 10 minute walk there and back. Our two 20 litre water containers had already been used up so it was a dash to our nearest neighbours and a request for water. This was our first introduction and we are indebted to the neighbour for 40 litres of her precious rainwater. (Luckily it rained the following week).

By this time the day was getting on. Midday and we were looking at a gigantic task ahead of us. The sun was hot and the concrete was beginning to set. We battled on but realised we were just running out of time and however fast



A sight that's struck fear and excitement into the hearts of many an Earth Gardener: the arrival of the concrete truck.

we worked we just weren't going to get through it all before it was solid. Rob then rushed into Bundaberg and hired a helicopter to try to break down some of the setting lumps.

I'm afraid initially I had to laugh. It looked like he was dancing with a resisting partner, twisting and turning around and around from corner to corner as he tried to tame the machine. It didn't take long for him to have it under control and turning the grey stew from solid mounds into a comparatively flat surface. By dusk we had a 20 x 30 foot concrete slab — not a perfect roller skating rink but adequate for our needs. We collapsed into bed that night exhausted but relieved. The following day was spent rendering the surface and two days later we moved the campervan on. Then we waited for our personal effects and the garden shed kit to arrive to complete our temporary home.

"The alternative to hand floating is the 'helicopter'. The concrete is allowed to go off after screeding until a person's heel won't sink more than 6 mm.

The helicopter is slowly moved over the slab, following the order in which the concrete was poured, in rows overlapping by 50 percent. It should take as long to float the slab as to screed it. Two complete passes are needed. The slab might have to be hosed during the second pass. A helicopter finished slab is never as good as a hand floated one, but it is much less work on a big area."

—Bob Rich, *Earth Garden Building Book*.



Mrs Spicer's cottage

by Pamela Odijk*

Sherwood, New South Wales.

WE HAVE lived at Mrs Spicer's Cottage, our simple split log home on 116 acres of paradise, for 18 months now. From our cottage we have a superb view down the Macleay River valley to the mountains in one direction, and over the coastal plain to the sea in another. In the distance we can just see the ships plying their way up the Eastern coastline.

With its electric lights, phone, gas stove, indoor loo and piano, it is far grander than the original Mrs Spicer's cottage — a poor selector's bark humpy on a patchy clearing fenced by sapling poles. The Spicers were typical of their lot, enduring the selector's life of hardship, loneliness and grinding poverty. Their beds were fashioned from poles and hessian bags while packing cases served as dressing tables

and wardrobes. Mrs Spicer's only luxury was a few geraniums — the only flowers tough enough to stand the drought conditions, and every bit of wastewater from the house, Mrs Spicer used to water them. Geraniums are among my favourite flowers and are predominant in the rock gardens we've built surrounding our cottage. In summer I find myself saving precious tank water from the house, and watering the geraniums, just like Mrs Spicer.

It was almost three years ago when we packed our bags, sent our possessions on a removalist truck to a temporary rented house at Wauchope, left Sydney behind and began a new life in the country. It wasn't rosy youthful idealism as many people imagined. We weren't born yesterday. We were in our forties and with grown up daughters finishing or studying at various universities around Australia, we decided we had served our obligatory sentence 'in the system' and were entitled to discover a 'way out' suitable for us. For me, this desire had its roots in my New England (New South Wales) country childhood, where, although we lived in town, I spent many happy school holidays on my grand-

*photographs by Herman Odijk

parents' farm or the farms of my aunts and uncles. For Herman, it was much the same, although his childhood experiences were on Dutch farms.

The first cautious step

A year's lease on a house on six acres at Wauchope was our first cautious step. Our city careers in a university library and an accountant's office, were irrelevant to our new location so we built on our second skills which had been carefully acquired and practised for many years: writing and photography.

I had contracts with a publisher and Herman began setting up his own photographic business. We were also completing our own university degrees as mature age students. The way back was being left open just in case we discovered it was all a big mistake.

The first year passed so quickly. We learned many new things, renewed the experience of growing our own food, having our own 'home-made and home-grown' stall at country markets where we made new friends.

We kept our own chooks and ducks, looked after someone else's horses, photographed local shows and other events and wrote thousands upon thousands of words. By the end of the first year we had put our city lives even further into the background and had immersed ourselves in our new existence. Our 'standard of living' fell, but our quality of life

greatly improved — a point most economists and many city dwellers cannot comprehend.

A secure hold

At the end of this first year we found our own piece of paradise. We could afford only half its value, but we borrowed the rest of the money and bought it. Our block is one of four of similar size, each once forming part of a banana plantation (where fortunately they didn't use DDT). We are the third owners of our block. The first owners built the two bedroom split log cottage, sheds, sited a dam, built some fences and established a rough but serviceable all weather road.

For reasons unknown to us, they sold to the second owners who stayed here for two years. Apart from having electricity connected, our predecessors seemed to have done nothing with the property — except to shoot the wildlife, we were informed by neighbours. It was a long time before the wallabies returned to graze on the grass in front of the cottage. Other birds and animals were also wary of venturing close, and when we began clearing back the lantana and overgrowth, we discovered the cases of many spent cartridges.

While I sat at my typewriter writing my books (all 27 of them in 18 months as my contracts demanded) and only having time to use my trusty hoe occasionally, Herman set



Geraniums in the garden at the end of the cottage verandah. A plank bench, two recycled milk churns, some secondhand bricks, grass and creepers help create a pleasant outdoor area. The pergola and 'studio' are in the background.

about establishing part of our property as an organic farm, nursery and orchard. We are above the frost line, the soil grows anything and tests showed there were no residues. We now have five acres fenced and under cultivation — bananas (with permission from the Department of Agriculture), limes, mangoes, passionfruit, paw paws, avocados, olives, apricots, figs, rhubarb, asparagus, chillies, parsley, beans, snow peas, cauliflowers, tomatoes and others, and we're experimenting with many unusual vegetables.

We have also planted many Australian flowering plants and trees for variation and aesthetic effect. We also have chooks, ducks and geese which provide us with eggs, fertiliser, grass cutting, pest control services and entertainment. We own no machinery, preferring to hire it if required but most work we do manually. Herman has become quite expert at fencing and cutting down and digging out lantana while I have become quite practised at weeding, planting and watering. We installed a pump and irrigation piping which we use in conjunction with a hand held hose when necessary.

More projects

Herman also built extensions to the cottage to include a verandah, outdoor living area, carport, covered storage

area for wood for the pot belly stove, and a pergola — all bounded by rock gardens. All rocks for these gardens were dug out of the vegetable garden area and brought up to the house in our trailer. The extensions and gardens were designed to integrate the cottage and the prefabricated studio — our work area separate from the cottage as demanded by the Taxation Department.

The studio is a modern building and almost as big as the cottage itself but for reasons of time, economy and necessity (many of our possessions were at the time being sheltered from torrential rain under a tarp against the side of the cottage), we did not attempt to build a compatible split log building ourselves.

Thoughts

Over these past years we have had our successes and failures. Our new endeavours at times proved to be more stressful and demanding than the city jobs we had abandoned. But we survived the change, completed the tasks we had set ourselves, including our university degrees, and we are still here. The city assumes an ever decreasing relevance and on those occasions when we've had to go there, we have been only too pleased to leave it again. We increasingly



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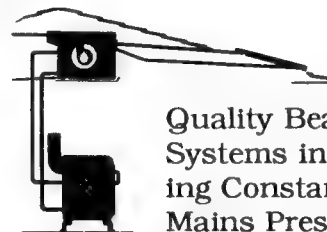
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The view from Mrs Spicer's cottage — daybreak over the valley.

dislike the values, excesses, extremes, violence, pollution and extravagances. Our four daughters have watched our rejection of the system and its materialistic values first with bewilderment, then curiosity followed by interest and finally enthusiasm.

It has added a further dimension to their tertiary education! Most of our former city friends however, still think we are stark raving mad.

We have more ideas and plans for our piece of paradise, although half of it will remain natural bush and rainforest. We have plenty of bush friends around including bellbirds, kookaburras, black and white cockatoos, rosellas, wallabies and bandicoots — many of whom visit. We have learned which plants and trees need to be protected from them.

We would like to remain at Mrs Spicer's Cottage for a very long time, but as we all know, the future doesn't come with gilt edged guarantees. So far the experience has been a constructive time in our lives, enabling us to reassess our values and perspectives and above all to simplify our lives. I am glad that we both hung onto childhood dreams from our different sides of the world and still had the courage and conviction to make some of them come true half way through our lives.

Henry David Thoreau once said:

"The youth gets together materials for a bridge to the moon, and at length the middle-aged decide to make a woodshed with them."

I tend to agree, but it matters greatly just where you choose to build that woodshed.

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Season

by

Season

Earth Garden's regular organic gardening column,
written by Jackie French

Coping with weeds

THIS IS the time of year when the soil cools down and things start growing. Autumn flushes are as marked as spring flushes. Fruit swells as much in a week as it did in the previous month and new soft shoots appear all over the place.

While in most respects this is good, after all, you do want things to grow, it can cause problems. Sappy new growth is attractive to sap-sucking pests. Luckily these are less of a problem than they are on new spring growth. There are more predators around after a summer's breeding to cope with them. If you are worried by aphids and other sap suckers try a reflective alfoil mulch to deter them, or companion planting with nasturtiums or marigolds right around the plant. Glue spray is effective: mix flour with boiling water till it's just sprayable. Use before it sets into clag.

Mostly I just squash aphids or leave them alone — they'll disappear soon enough in cold weather anyway. The other reason for leaving the aphids alone is that they will help regulate that soft sappy growth, which is liable to be blackened by frost. And dead material can host fungus and other disease that might start die back along the branch or twig. Don't always assume that pest damage is bad in the long run.

Autumn crops

If you want to take advantage of the autumn flush for vegies think about English spinach (not silver beet — real spinach) that goes to seed in hot weather. I'm putting in collards, popular in southern USA — a leafy cabbage-like green which is traditionally cooked with bacon grease but better just steamed with butter. Another autumn crop is corn salad — large round green leaves that are bitter in hot weather but sweet in the cool; it's very frost resistant. This year we're also trying edible Chinese chrysanthemum. You harvest the leaves after 35 days, and eat them steamed or in soup or stews. You can get the seeds from Minara Pty Ltd, PO Box 69, Aspley, 4034. Ask for their catalogue, as they have the best range of oriental vegetables I've come across, including large green radishes, yam bean root, and a variety of snake beans.

This is also the time to put in anything you want to 'go



to seed' in spring, like peas, cauliflower, broccoli — the sprouts you eat are the immature seed heads. While many plants like carrots and leeks will survive the frost if planted now, they will still be very small when they go to seed in spring.

Bedding down for winter

Mulch now. It'll help keep the soil warm, and will have broken down to feed the plants in spring. *Don't* clean up the garden — leave those corn stalks, radish going to seed and patches of weeds alone. The weeds probably won't seed or run about till spring anyway, and they'll protect the soil structure and stop erosion in wind and water. Gardeners who recommend you spend your peaceful winter months 'tidying up the garden' just have a fetish for straight rows and nice chocolatey bare earth. This may help their spirits but won't help the garden. Gardens are wasted on people with passions for sweat and blisters. Gentle pottering and a bit of contemplation are more effective than maniacs with mattocks.

Why you needn't weed

Our attitude to weeds is a hangover from Europe last century. Labour was cheap and the thirteenth gardener at the manor house could weed the flower bed and there was no tele, and sex was for under the covers with the lights out only, so what else would you do on Sunday afternoons but weed the cabbages?

After World War II labour became scarcer and chemicals (often war research by-products) were the answer to our prayers and 'dig them out' turned into 'poison them away'. Until recently very little work has been done on other ways to live with weeds — evolving strategies to cope with them instead of wiping them out.

There isn't room to list all the possible strategies here. There's at least a book full — it is in fact the subject of my latest book, and that's about ten times shorter than I'd like.* But as a very brief summary, there are three ways to look at weeds. 

Leaving weeds alone

The first way is not to bother about them. The idea of weeds is a very Western concept. Aboriginal society, for example, had no concept of weeds — they saw the world as a harmony, not something to be re-created.

Weeds are stabilisers, growing in disturbed or overused land, the first arm of an invasion that will bring land back to bush.

You can see it among the blackberries here. The blackberries provide a moist dark shelter for the pittosporum seedlings, which grow in a dark canopy. The pittosporums gradually spread over the blackberries and shade them out. After a few decades there are trees not blackberries. The same happens with bracken. It grows on overgrazed flats and slopes, and nothing much eats it — or even penetrates it to pick at the grass underneath. The wide fronds protect the soil from wind and water erosion, the grass underneath reseeds and so do tree seedlings away from heavy feet and hungry mouths. Eventually, again, the bush grows back.

You can also see it with the thistles, which appeared here when the land was overgrazed with newly introduced sheep. Finally the sheep were removed, leaving paddocks of thistles, almost too thick to walk through. A year later no sheep, no grazing and no thistles. Animals avoid thistley areas, which lets the grass grow up around them and finally out competes the thistles.

Not all weed problems can be solved by leaving them alone. Land regenerated to bush is usually the last thing most farmers want, and there is

little bush to re-colonise in the suburbs. But it is presumptuous to believe that all problems must be solved by humans. Weeds are one solution to bad management — even if it is not the solution we may want.

Using weeds

This is the next option

for coping with weeds. Most people know about eating dandelions and making stock from nettles, but have you ever tried boiled couch grass? Strain off the liquid after 20 minutes, chill and drink. It is slightly liquorice-like, slightly sweet, a good kidney tonic — and rather nice. Try peeled thistle stalks, steamed or fried, or very young thistle buds before they start to prickle. Stir fry blackberry tips or bracken tips in spring; make a sharp sauce from sow thistle leaves for fish, or stuff a fish with them; make a soothing ointment out of chickweed or grind pigweed seeds for a nutty meal to bake in biscuits.

A weed-free garden, from weeds

Take a very weedy area, preferably where the weeds are above your head. Mow them down, rake them up. If you have any blood and bone or manure, or even urine handy give it a sprinkle (this is not essential). Lay down newspaper on the residue. Now pile the weeds on top. After about a month (in warm weather) dig small holes through the decomposing weeds and plant your seedlings. Water well: the moisture will need to penetrate the newspaper to the ground below. You will probably need to apply homemade liquid fertiliser as well till the weed mulch starts breaking down and releasing its stored-up nutrients.

Living with weeds

My garden is full of weeds. The worst ones, like couch or kikuyu, I remove. The others I leave till needed as home grown mulch.

Well grown plants will outgrow weeds but the garden needs to be fertile and moist. Unfortunately weeds are tougher than most vegies (that's why they are weeds) and grow better in poor circumstances. Once any vegetable is more than one third grown, however, it'll probably outgrow any new weed that appears, stunt it and overpower it without reducing its own cropping.

Never leave bare ground. Weeds colonise bare ground. Plant green manure, even if it's only radishes or sunflowers. Cover with mulch or newspaper (this can be removed when you need to use the ground). Consider weed mats (these can be reused several times if you plant your crops in rows). Try placing clear plastic between your plants for a couple of weeks to kill weeds and encourage weed seed germination; then pick up the plastic and move it elsewhere. See solarisation.

Try a 'moving rubbish heap'. Start weeding at one end of the garden. Toss the weeds on top of other weeds further down. They'll kill them, gradually breaking down and adding to the garden's fertility. (Weeds that have gone to seed need to be composted or made into green manure, and weeds that may reroot should be placed on paper. Weeds may also be placed around seedlings too.)

Use sprawling plants to keep down weeds. Consider intercropping. Try vine crops like pumpkins, even chokoes grown on the ground, or melons. Hops or banana passion-

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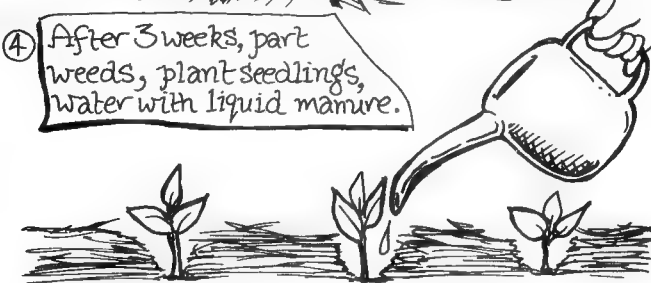
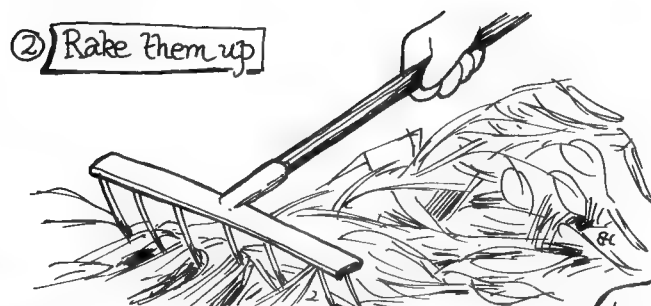
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A GARDEN OUT OF WEEDS

fruit grown at the side of the garden won't steal nutrients from your vegetables but their greenery can be used as living mulch.

Think of fast maturing radishes that can be pulled out as more productive crops start to grow. Crops can be slashed to provide mulch between rows of other crops. Think of clover (excellent with brassicas to inhibit cabbage white and cabbage moth caterpillars) lucerne, foliage turnips, or young sunflowers.

Make sure you control undesirable weeds. Weeds like couch and kikuyu won't co-exist with vegies. Pull out perennials before they seed, slash annuals. Cover them with mulch or use any of the weed control measures above. Try not to introduce new weeds: in mulch, on your clothes (grass seeds, bindi eyes, cobblers pegs etc can stick to your clothes — that's their way of expanding their territory).

Try barriers around your garden to keep out grass and other unwanted species — either solid barriers like sleepers or cement walls, or old tyres or a living barrier like thick, deep rooted comfrey. I prefer comfrey. Its deep roots bring up leached nutrients and the leaves are an excellent mulch and fertiliser for the garden.

Plant much more thickly than recommended rates on seeds packets. Thicker planting means no bare ground for weeds to colonise. Excess seedlings can be pulled out. Tiny carrots are sweeter than big ones, young beetroot leaves can be cooked like spinach and tiny lettuce leaves can be tossed in salads.

Many plants will be stunted by their more vigorous neighbours, then start to grow when these have cropped. I find with cauliflowers, red mignonette lettuce, carrots, beetroot, leeks and many other vegetables that the smaller

plants will stay dormant till I harvest the more vigorous. Then the smaller plants will start growing and crop in their turn: an easy way to stagger your cropping.

Simple ways to get rid of weeds Digging

This is the classic method — a lot of sweat and if the ground is left bare too long, more weeds will colonise. Dig the ground, wait for weeds to germinate while watering well, then dig again three weeks later. Levelling the bed with a rake will help weed seeds germinate.

Mulch

This is also a lot of work, unless you grow your own. I use weeds and garden waste as mulch, just flinging them down as I pull them out. I also grow radishes between my plants. They germinate easily, keep weeds out, and when I need their space they can be pulled up and used as mulch.

If you are planting seedlings in mulch, dowse them with chamomile tea to prevent damping off and add some nitrogen-rich material like blood and bone or liquid manure. This compensates for the nitrogen which becomes locked up as the mulch decomposes. With higher nutrient mulches like comfrey, compost and green lucerne, or a leaf and grass clipping mixture this shouldn't be necessary.

Grazing

Sheep, pigs, hens, goats and rabbits in cages placed over the area you want to clear will clean up weeds. Try tethers in small areas, or a small round fence made from reinforcing mesh, or even electric fences.



Companion planting

Mexican tradition plants melons with corn. The melons suppress the weeds and fruit is a bonus. Plant your crops as thickly as possible: bare ground invites weeds. Sweet potatoes are another traditional weed suppressant crop with corn. Try planting peas thickly with taller vegetables to provide a quick weed suppressing, nitrogen fixing soil cover.

Solarisation

Everyone knows about covering weeds with black plastic. The trouble is it mostly doesn't work — they creep out over the edges looking for the light. Try clear plastic (solarisation) instead. It involves stretching a clear plastic sheet over the soil and sealing it in shallow trenches at the perimeter. Trapped heat raises the soil temperature several degrees and destroys young weeds, many seeds, as well as soil pathogens like verticillium wilt which attacks tomato crops. Older weeds grow like mad in the heat and moisture — soft sappy growth that gradually cooks — and the plant dies of its own vigor.

Weed mats

See 'the easiest garden of all' in the previous issue of Earth Garden. Weed mats effectively control weeds, reduce moisture loss and often store or radiate extra heat which promotes plant growth. The only disadvantage is the initial expense — soon recompensed by increased plant yield and less labour needed for weeding.

Drip irrigation

Drip irrigation along lines of crops can cut down weed growth as well as encouraging crops to out-compete them. Why water weeds?

Slashing

Regular slashing between crops will stop annual weeds seeding, and depending on the type of weeds you have, may be enough for effective weed control. Perennial weeds with runners like couch, however, may only be encouraged by regular slashing.

Persistent weeds

If you have an area that is impossible to get weed free — don't try. Dig it up and plant marigolds, poppies or buckwheat, as thickly as possible. Both will inhibit weed growth and germination. So will oats, rye and wheat. Slash them for green manure or dig them in.

Alternatively, graze hens or pigs through the area till it's bare. Hens can be placed in bottomless transportable cages to control weeds in small areas.

Killing weeds

Any substance that kills plants is technically a herbicide. Some home made, less harmful herbicides include:

Urine. Undiluted urine can kill plants, especially if they are shallow rooted. Urine is especially useful for lawn weeds. See lawns. For best effect urine should be more than 24 hours old (it turns more ammoniacal as it ages) and should be applied to dry soil. Two applications over a 48 hour period are best. The main disadvantage is the difficulty of obtaining enough urine. I have even killed young blackberry plants with undiluted urine, but the older roots are longer and deeper and urine control isn't practical.

Sulphate of ammonia. I don't advocate this for growing plants, but as a plant killer it is excellent. Use it like urine on dry soil, undiluted and on shallow rooted plants.

Borax. Use this with extreme caution, if at all. It kills plant life. While it's side effects don't spread — unlike most herbicides — too much is toxic for the soil.

Kerosene. Paint cut off plant stalks with kerosene while they are still wet after cutting. Several applications may be necessary depending on the size of the plant and the size of its roots.

Many other substances kill plants, like Condyl's crystals, or salt, which will kill any plant life if it is concentrated enough. The side effects however more than outweigh the benefits.

Natural herbicides

All gardeners know that some plants don't grow well with other plants. If your vegetables are infested with couch grass, for example, they'll do badly.





Often, of course, this is simply the result of competition for water and nutrients. But, as with couch grass, some plants actually suppress the growth of others. Some produce phytotoxic substances, either from their roots or washed down from their leaves, which inhibit other plants' growth. Some plants stop seeds from germinating.

Some plants stunt any plant around them, and this is part of their defence against competition. Others only affect a certain range of plants. It is the latter effect that is the most useful in the search for 'natural herbicides'. Couch grass, paspalum, bracken, pittosporum trees, red gum and wormwood will inhibit weeds, but they'll also inhibit almost anything else you try to grow.

Over long periods, however, certain plants do develop tolerances to the phytotoxins of others. Barley inhibits many weeds, but not wheat, for example (possibly because wheat and barley have been grown together for so long). Often traditional peasant associations, like Mexican squash and corn, make use of toxins secreted by one plant (the squash) to inhibit weeds, while the other grows uninhibited by the herbicide effect, and more strongly in the absence of weed competition.

Natural herbicides, unfortunately, still aren't much use to the home gardener. Even reproducing peasant 'companion associations' may not give you the herbicide effect. It has been bred out of many modern commercial varieties.

Pin pointing the chemicals in cultivars that inhibit weeds, either to harvest or synthesise them, is a growing area of research into natural herbicides. Endothal, a US herbicide used against water weed, is based on a naturally occurring growth inhibitor.

In practical terms, for the home gardener or commercial grower, there are still a few strategies you can use to suppress your weeds with 'natural herbicides'.

1. Use 'natural herbicides' to 'clean' a paddock or garden of weeds before you plant your crop. Try a barley, oat or

other grain 'green manure', either digging it in or slashing it and letting it decompose on top of the soil. Germination suppressors include all grains. Oats, in particular are effective, but wheat, buckwheat and rye will also help 'clean' an extremely weedy paddock or garden bed.

2. Try poppies in the home garden to keep down weeds. Plant them after your other flowers are established, and they will help stop weeds from germinating. They are most effective sown thickly. Poppies can also be grown as a companion plant in the vegetable garden.

3. Use cucumbers or pumpkins between tall crops like corn and broad beans to keep down weeds — not just by their smothering effect, but also from the substances produced in their leaves.

4. Potatoes suppress the germination of many weeds around them. Many of the 'stately home' lawns were first planted with potatoes by gardeners who knew their value in 'cleaning' weedy ground.

5. Try crops of witloof, chicory, the cabbage family (especially if the residue is left in the soil to rot), or mugwort to clean up a weedy vegetable garden. I once experimented with two trial plots of cauliflowers. The first were dug up as they were harvested, the second were simply cut and the stalks and leaves left in the ground. The plots were then left bare for a month. The plot with the stalks was still almost weed free (only clover seemed to spring up around them). The totally bare plot was almost knee high with at least seven weed species.

6. If you are growing pasture, Canadian thistle inhibits the growth of at least three sorts of annual thistle (as well as ryegrass and clover).

'Herbicide' mulches

I have tried using nut tree leaves, oak leaves, cypress leaves, pumpkin leaves as well as mugwort and bracken as weed suppressing mulches. Slash the bracken or the mugwort, or use the foliage from the trees. You have to be very careful not to place the mulch near your plants or they too may be inhibited. While these 'natural herbicides' have been successful in keeping weeds down (much more suc-



cessful than companion plots with ordinary mulch) I think the extra work involved is not usually worth the result.

It is however an interesting area to experiment with, and it might be worth while trying a large amount of 'natural herbicide' mulch on an area you're trying to 'clean' of weeds. At least nut trees, oaks and cypress provide large amounts of material to work with.

Natural herbicides to avoid

Be wary of couch, bracken or paspalum under fruit trees: all these inhibit plant growth. Even used as mulch they have an effect, though I've found bracken mulch is better than no mulch at all.

If you are growing pasture, serrated tussock inhibits white clover, bent grass and cocksfoot. Many thistle species inhibit a wide range of grasses. Buttercups and other ranunculi inhibit clover in your lawn or under trees. Beware of pines and cypresses. They not only make the soil around them acid, but exudates washed down from their leaves also inhibit both the growth and germination of most other species (ever wondered why pine forests are so bare?).

Keep grass out of your garden — most grasses suppress other species. Watch out for aromatic herbs, especially mugwort, because water washing down from their leaves may contain growth suppressants. Keep other plants away from their drip line, especially if you are using them as a border for the garden.

'Herbicide' trees

Many trees are natural herbicides, though they are more difficult to use for weed control. Most nut trees, especially walnuts, most pines and cypresses, red gum, pittosporum undulatum and many other 'canopy' trees will suppress growth underneath them. Sometimes the inhibiting effect is washed down from the leaves; at other times it is associated with the roots.

Don't plan to grow other plants under these trees. Choose other species as climbing frames for your chokoes, but grow them, anyway — they make wonderful canopies for animals to shelter under and for children to play in.

*Jackie's latest book, *Organic Control of Common Weeds*, has recently been released and is available from Earth Garden (\$15.95 posted). See page 56 for ordering details.

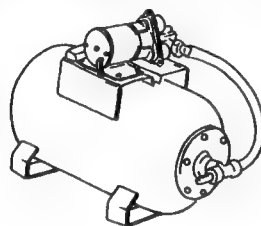
Preserving tomatoes

During the 19th Century tomatoes were regarded with suspicion by all but the upper classes — as poisonous, as aphrodisiacs; at best as luxuries, to be savoured by themselves. Within 20 years they were staples. Tomatoes are one of the few crops I can't feel 'seasonal' about. I want them all year round. But even if you're prepared to pay for them in winter, the only ones around are blushing golf balls, not worth buying.

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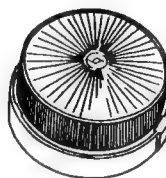
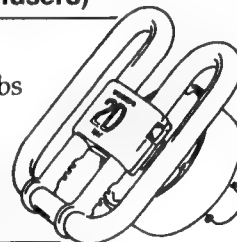
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Preserved uncooked tomatoes

Take ripe, firm small tomatoes. They must have no bruise or blemish at all. Make sure they are clean and quite dry.

Place them in a tall, deep jar, one at a time — again, make sure they do not squash, bruise or split. Cover them with oil right to the top of the jar. Seal. Keep in the fridge till needed. These will keep up to six months or even longer.

Tomato paste

There are dozens of ways of making tomato paste. Try chopping the tomatoes, add no water, and simmer till they are thick and bubbling like magma — great bursts of bubbles that spread over the kitchen. Spread the mixture on alfoil and leave in the sun till it's dry — take indoors in wet weather or at night. Now roll the sticky mixture into balls, dip each ball in a cup of oil and store in sealed glass jars in the fridge. Take out a ball as you need it. Otherwise just stuff the paste in a jar and cover the lot with oil, although this can give an uneven surface as you use it which may not be oil covered, so you can lose some of the paste to fungus.

If you don't want to dry the paste in the sun boil it down as far as possible with a tablespoon of white vinegar or half a teaspoon of citric acid for every four cups of tomatoes. Pack the thick purée into glass jars, and cover

with a film of oil. Place the jars in the oven in a tray of water and cook till the water just boils. Leave till cool and seal.

The paste can be flavoured at the simmering stage with garlic, black pepper or very finely chopped basil or thyme.

Sweet preserved tomatoes

Ingredients

tomatoes
sugar
basil
garlic

Skin the tomatoes by pouring boiling water over them. Place them in a dish and cover with sugar. Leave them for two days, then pour off the syrup. Boil the syrup for five minutes, and skim off the scum. Pour the cold syrup over the tomatoes. Leave them for another two days. Boil the syrup again.

Leave another two days and repeat. Take out the tomatoes carefully and put them in the sun on wire racks. Take them in at night; pull them out when you are sure no moisture will touch them. They should be crisp on the outside and quite ready in a week of hot sun or two weeks of mild weather.

Place them in a wooden box (not plastic — they sweat) with castor sugar packed between them so none are touching. Put a lid on the box.

These tomatoes should keep for three years.

Sun dried tomatoes

These are wonderful. Cut your tomatoes in half. Leave them on trays in the sun for three days to a week till dry. They should be chewy rather than crisp. Pack them in jars with a little garlic or basil or fresh thyme; pack them down hard then fill the jars with olive oil. Put the tops on the jars and keep till needed. Add the tomato and oil to soups and stews.

Happy gardening.

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French Tarragon (*Artemisea dracunculus*)

— The cuisine herb —

by Liz Sinnamon

Kenilworth, Queensland.

FRENCH tarragon is native to the Mediterranean countries, and has long been popular in continental cookery. With its unique, tart flavour and spicy aroma, it is one of the most sought after culinary herbs.

The leaves are long and narrow and grow on either side of thin wiry stalks, which, together with the main stems twist and turn in a tangled habit, to form a thick, bushy plant 90 cm (3 feet) high.

Small, tight yellowish buds appear in late summer which rarely open into full bloom, therefore never setting seed. There is another variety of tarragon which is grown from seed, called Russian tarragon, a native of Siberia. It has very little flavour, although when French tarragon is scarce, it can be used as a substitute in a recipe. Another type is winter tarragon, with firm, dark green leaves and a strong spicy flavour. It is a sturdier, neater looking plant than French tarragon and can be grown as a substitute.

Cultivation

To grow a reasonable number of plants, tarragon should be propagated by cuttings. Take 15 cm (6 inch) tip cuttings in late spring, when the new, soft leaves have become fairly firm. Insert the cuttings, which have had the lower leaves carefully removed, in a pot of moist coarse river sand, leaving approximately 5 cm (2 inches) of cutting above the sand. Cover with a plastic bag to retain moisture. The cuttings should be established enough to be planted out in six to eight weeks.

Propagating from root division will not yield as many plants but is quite satisfactory if only a few plants are needed. The plant dies away to ground level in winter (except in very warm climates), with new shoots appearing early in the spring. At that time pieces of the main root system, together with a new shoot, can be cut away. The pieces should be 5 cm (2 inches) long, and planted 30 cm (12 inches) apart. Commercially available seed is generally Russian tarragon.

Tarragon requires well drained soil and a sunny position, although it also needs to be kept watered, especially in dry weather. Grass mulch 10 cm (4 inches) deep should be applied around plants to conserve moisture and keep the soil cool.

Cuisine

Tarragon is the only one of all the artemisea group which has culinary uses. The aromatic fragrance of tarragon



•French Tarragon•
(*Artemisea dracunculus*)

complements fish and shellfish, and the fresh leaves can be used for decorating and flavouring fish moulds.

Use with chicken, veal, liver and egg dishes. Tarragon can also be added to sour cream dressing, mayonnaise, and butter sauce, although excessive use of dried tarragon can produce a slightly bitter flavour. Tarragon steeped in white vinegar gives it a particularly savoury flavour.

Medicinal

Tarragon leaves contain an exceptionally high quantity of warm volatile oils, and should be mixed with other herbs and lettuce to 'temper the coldness' of a salad. An infusion of the young tops will stimulate the bladder, and it is reputed to be "a friend of the head, heart and liver".

Cosmetic

Tarragon is one of the few herbs that appear to have no contribution to make in the cosmetic field, although oil of tarragon would be a fragrant addition to a beauty soap.

Companion planting

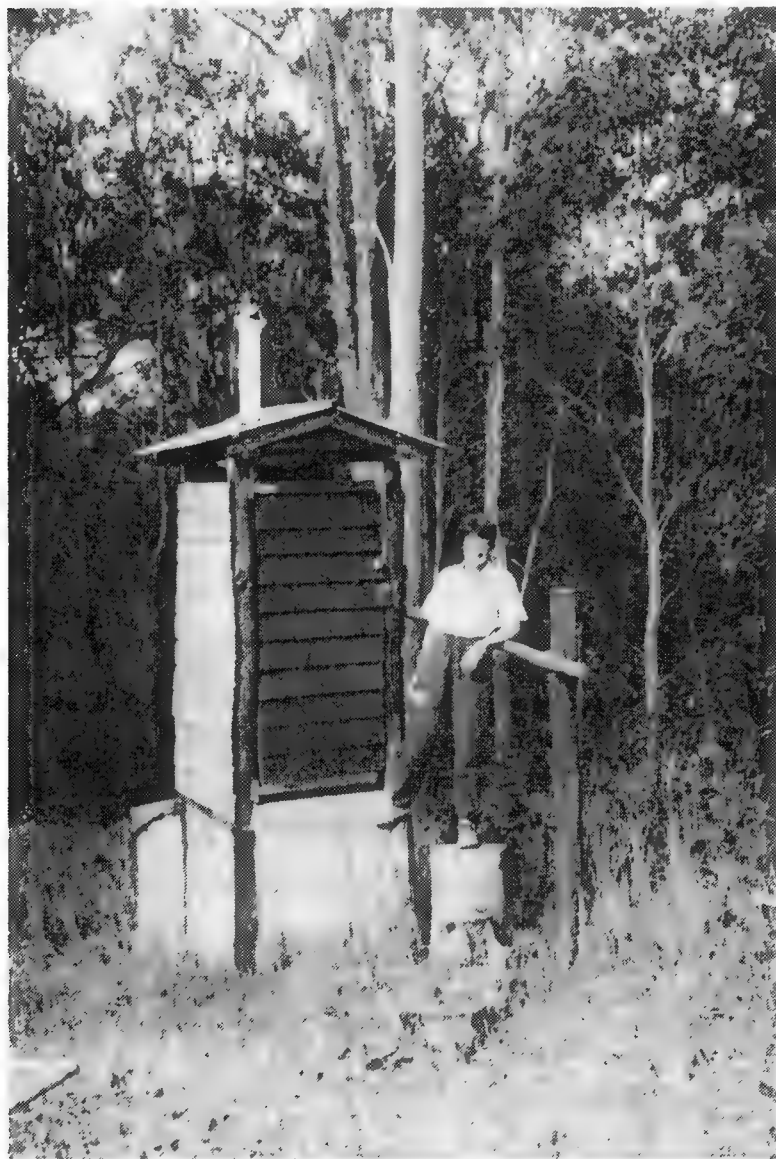
Tarragon is one of the aromatic herbs that are generally helpful to plants in the garden, and does not appear to hinder the growth of any herbs or vegetables.

The mudbrick Sisters of Dondingalong

by **Gwen Rogerson**

Heidelberg, Victoria.

SEVERAL times over the years I have read in Earth Garden a small advertisement inviting women to attend, 'An Exploration in Living' course with the Sisters of the Church at Dondingalong near Kempsey. It always caught my interest and this year I was determined to apply. Dondingalong is an Aboriginal word for 'place of hills' and is situated about 15 km west of Kempsey. I travelled up from Melbourne by coach to Kempsey and was kindly met by one of the Sisters and several visitors attending the program. We drove along some dusty roads and were soon at the House of Prayer.



The House of Prayer is situated on 44 acres, and there are several large buildings including sleeping, eating, and washing accommodation, a chapel, shop, workrooms and library. The Sisters have also built themselves sheds for cars and machinery, animal enclosures, a composting toilet, and several self contained mudbrick buildings where guests who wish to be more isolated may stay. These are fitted with basic toilet and washing facilities and are solar powered.

There are lots of gum trees around the property and the joy of waking in the morning to a sunny day and bird song in these trees, was sheer bliss to a townie like me.

There are eight Sisters at Dondingalong, all ages and sizes with various talents which they willingly shared with us. They rise at 5 am and have special prayer times in the

chapel at 6 am, 12 noon and 5 pm and in the evening. We were invited to attend these times if we wished. The Sisters work extremely hard — gardening, looking after the hens, ducks, donkeys, cows, housecleaning, spinning, weaving, potting, tatting, rug-making, making greeting cards to sell, taking Sunday School, hospital visiting, and being most hospitable to those who come and stay.

A program of activities had been worked out for our benefit. It was not compulsory for us to participate. Most of the 15 of us did, and added extra expertise when we could.

The participants came from South Australia, Victoria, New South Wales, and Queensland and our ages ranged from late 20s to late 50s. Like the Sisters we varied in size and personality. We took our breakfast and lunch in the garage. This was a double garage with matting on the floor. It was one Sister's job to see that our supplies of food didn't run out. It was suggested that we have breakfast at 7.30 am and lunch at 12.15 pm. A choice of cereals, breads (often home-baked) fresh fruit, nuts, spreads, tea and coffee were available for breakfast. At lunch time a beautifully prepared salad (mainly from the well-tended garden) plus hard boiled eggs, cold meats or cheese, plus wholemeal bread, were on the table.

We ate the evening meal with the Sisters in 'the house' at 6 pm. One Sister was responsible for preparing the meal each day . . . it was always a simple delicious meal, mainly of home produced food.

Gwen outside the composting toilet built by the Sisters at Dondingalong.

Activities

The organised activities were varied. We helped burn a fire break, and mend fences. We learnt seed propagation, soap making, coffee roasting (from home grown coffee beans), script printing, pottery, yoga, spinning, weaving, rug-making, tatting, and bread making. We were given a conducted tour of the vegetable garden and the orchard and one day we extracted arrowroot powder from the plant bulb.

In our spare time some of us climbed nearby Mt Gowing, walked to the Cascades, drove into Kempsey, visited the nearby dairy and pig farm, read in the library, and did painting and sketching. There was also a large jig-saw puzzle and quoits for our use.

Because the Sisters rise early they also retire early. However each evening, after dinner, we had something organised — talks, discussions, practical tasks on prayer and meditation, a visiting speaker or an impromptu concert and sing-song.

Now that I've returned to normal life my mind recalls a number of beautiful memories from being at The House of Prayer. Some of these include the sun shining through the gum trees in the early morning, ducks peacefully paddling on the dam, the donkeys getting their feet done on Saturday morning, Alfred the old rooster strutting into the garage to pick up crumbs, sunset from the verandah, attending the services in the chapel, and listening to the bush noises at the close of the day.

I enjoyed my stay at Dondingalong greatly. I think we all came with certain questions that needed answering and in the wonderfully calm peaceful Christian atmosphere that surrounded us in this beautiful bush setting, it was an ideal place to find the answers.

My grateful thanks go to Earth Garden for publicising this, the Sisters for their ever helpful guidance and hospitality and to the other visitors and their friendship.

•The Sisters of the Church are at Dondingalong, via Kempsey, NSW, 2440.



Look — no hands. Sister Doreen, from the Solomon Islands, carrying her luggage.

Gwen, with Sisters Helen and Elizabeth in the background, about to tackle the donkeys' feet.



The effects of Cosmos on plant growth

by **Brian Keats**

Bowraville, New South Wales.

MOST people know that the rhythms of the sun are the main factors influencing plant growth. The relationships between plants, and the moon and stars, are less well understood.

Planting by the phases of the moon is one of the oldest practices in agriculture and there are many planting calendars based on this concept alone. Generally they advise to plant root crops before the new moon and all other crops towards the full moon. If the situation were that simple this would have been proved conclusively long ago!

What has been shown, however, is that plant growth (as opposed just to germination) correlates to the moon phase. Metabolic rate, water absorption, nutrient uptake, electrical resistance and rate of growth have all been shown to have a moon phase effect. The maximum rate of growth, and water and phosphorous uptake, happen around the full moon.

Other rhythms

There are several other rhythms besides the 29.5 day

cycle of the waxing/waning moon (phase cycle). It is only with an understanding of the other three cycles and their interrelationships that we will be able to get a more complete picture of the moon's effect on plant growth. Every full moon is different to the others of a given year. They vary in altitude, proximity to the Earth and zodiacal position. Its influence will also depend on its relationship to the planets as well as terrestrial factors such as prevailing weather conditions and soil type.

The rhythm which governs the moon's altitude is a 27.5 day cycle (none of the lunar rhythms is synchronous). In this period the moon moves from traversing a low arc across the sky to a high one and back down again. The sun does the same action but does so over one year. In winter the sun moves in a low arc across the sky. After the winter solstice it begins to climb (ascend) ever higher until midsummer and then goes down again (descends).

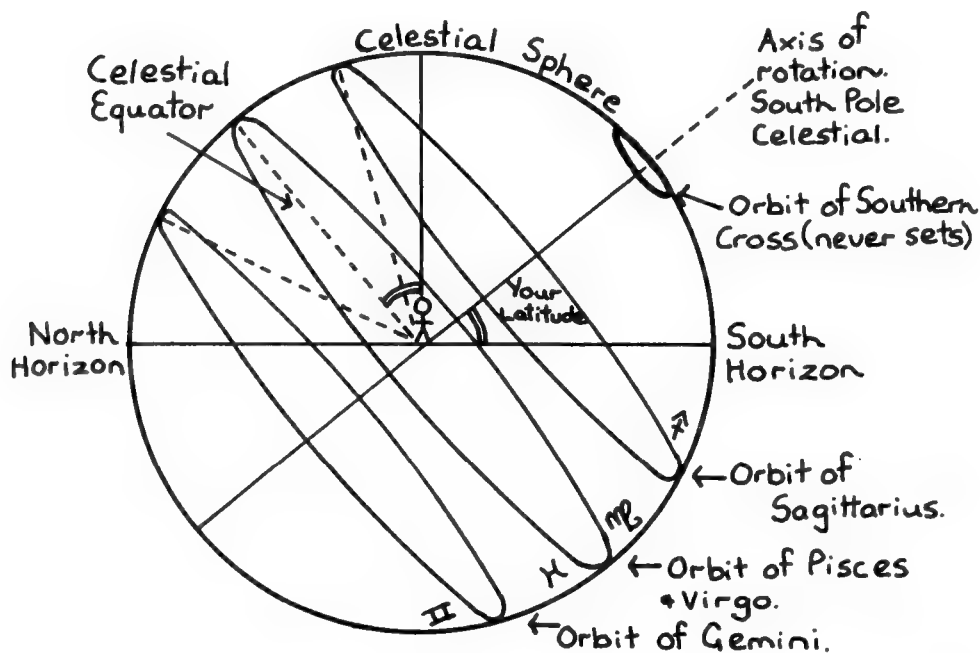
A full moon at its highest point (peak ascension) has a stronger influence than a full moon at peak descension just as the sun is stronger at midsummer than at midwinter.

'Ascending' and 'descending' activities

When the sun ascends, plant vitality is emphasised in

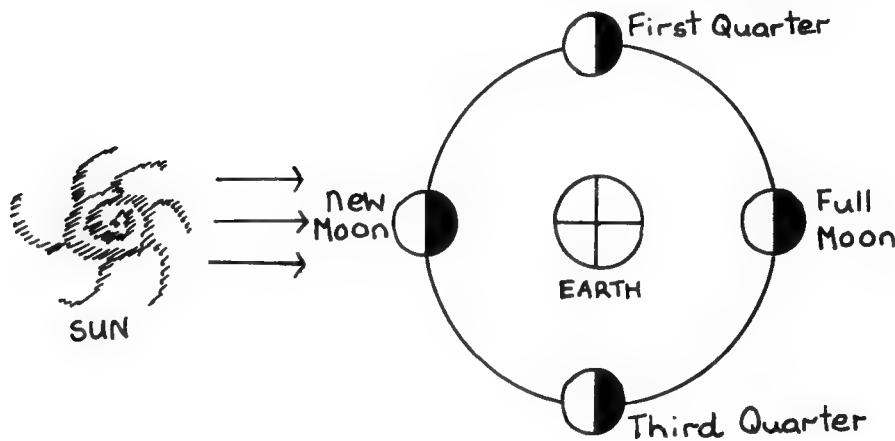
the upper reaches of the plant and when it descends the vitality is transferred to the lower reaches giving a general impulse towards root growth. This does not mean to say that this is the only time roots grow but is rather the main part of their growth cycle.

Agricultural activities associated with the ascending period are grafting (but not pruning) and harvesting crops that have their emphasis on aboveground development — for example, cereals, fruit and leafy vegetables. In biodynamic practices 501 is sprayed on mornings of the ascending moon (often confused with the waxing moon).



An east perspective of the orbits of the Zodiac. When the sun, moon, or a planet are in a constellation they scribe the same circle in the sky as that constellation.

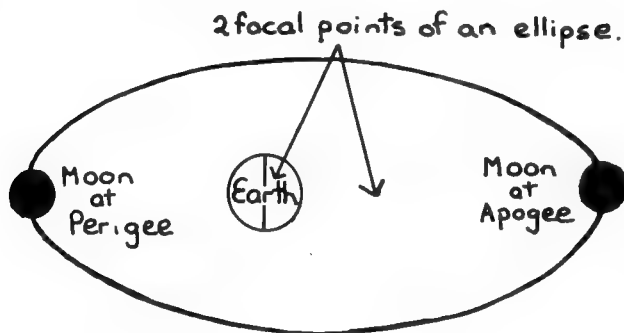
29.5 Day cycle of waxing/waning moon (synodic)



Phases as seen from the Southern Hemisphere

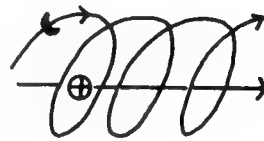


27.55 Day Cycle of Apogee/Perigee (Anomalistic)



Earth/moon approximate distance is 400,000 kms, but can vary between Apogee + Perigee by 40,000 kms.

If the Earth is taken as stationary, the moon's orbit around Earth is elliptical, with Earth at one focal point. However, as the Earth is moving around the sun the "ellipse" never closes so the moon's orbit becomes more of an elliptical spiral.



For the descending period, activities are transplanting, compost making and spreading, planting and harvesting of root crops, liquid manuring and the spraying of 500 (biodynamic spray).

If you don't have a calendar of these lunar rhythms you can easily learn to distinguish if the moon is ascending

or descending with regular observation. The positions on the horizon of moon rises and sets is markedly different from day to day.

Apogee/perigee rhythm (27.55 days)

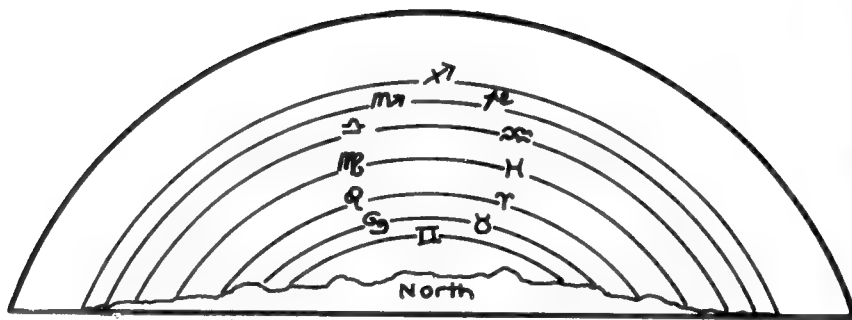
The moon varies markedly in its distance from the Earth. When the moon is close to the Earth (perigee), the lunar forces can be too strong, especially if enhanced by a full, ascending moon preceded by rain! At apogee terrestrial forces dominate, biasing activities that favour the Earth, which is okay for things like root crops. Generally however we are seeking a more balanced situation from Nature for the planting of seeds, and plant between the extremes. This cycle could be seen as a rhythm of balance between Earth and moon.

Potatoes which can favour a one-sided Earth activity do relatively well planted at lunar apogee and, taken a step further, near Earth aphelion too, when the Earth is most removed from the sun. As the aphe-
lion falls in July one has to wait until the frost activity for a particular district has subsided.

Sidereal rhythm

From the Earth the moon can be seen to pass

in front of the 12 regions of the Zodiac each 27.3 days (lunar sidereal month). When the moon passes before a constellation, it enables the formative forces emanating from that constellation to work more strongly into plant life, in a qualitative way. The four elements in Nature, earth, water, air and fire (warmth) are associated in the plant as root, leaf,



A north perspective of the orbits of the Zodiac.

flower and fruit. Each element is represented by three constellations. For example, Taurus, Virgo and Capricorn, are all earth signs and are 120° apart.

Seeds planted in earth signs would have an impulse towards furthering their root development rather than their leaves, flowers and fruit. To emphasise a quality of 'fruit-ness' one would plant in a fire sign and so on. Within the grouping of the four elements, each constellation still has its own qualities.

There are different Zodiacs. Most people are familiar with the tropical Zodiac which is the one most used in astrology, and which is different to the sky as we see it. There is also the sidereal Zodiac, which is 25° different from the tropical, and the sidereal Zodiac of unequal signs (the other two Zodiacs have each sign at 30°). These Zodiacs have a geocentric (Earth centred) perspective which is the picture of the heavens seen from Earth. To confuse the issue further,

there are also heliocentric (sun centred perspectives).

I feel all these Zodiacs are valid in their own right and each one gives a different picture. The relevant Zodiac for the plant world, in my opinion, is the sidereal Zodiac of unequal signs. This gives a picture of the heavens as we see it with our eyes. These descriptions only serve as an introduction to moon planting and the Zodiacs — planets have an effect too.

•Brian Keats shares a small biodynamic farm with Susan Pearson near Bowraville on the mid-north coast of New South Wales. They combine their interests in naked eye astronomy and the plant world to produce the annual Astro Calendar of the antipodes. This is a comprehensive, 30 page guide to the sky and planetary planting.



The Healthy House Cow

written and illustrated by Marja Fitzgerald

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Independent power systems — are the big inverters really necessary?

by Peter Pedals

Nimbin, New South Wales.

MANY people start off with 12 volt independent power supply systems and, because of inadequate wiring and installation, become disillusioned with the concept. I would like to present the view that if done properly, a 12 volt home power system can in many ways out perform both the 240 volt grid supply and 240 volt inverters.

To connect a remote house to the 240 volt grid supply, you have to pay in advance and usually wait up to 12 months or more before you have the power poles to the front door. And then you have to pay an electrician separately to wire up the house and have it ready to connect to the mains. To get the power poles onto the property they must also clear 20 metres on either side of the overhead cables and this buffer zone must be maintained forever. Both the 240 volt grid and the telephone connection require heavy machinery to come onto the property to put in the poles and/or lay the cables.

If the 12 volt or 24 volt installation is done by someone who knows what they are doing it is in fact much easier to connect up an independent power system than having to deal with bureaucracies to connect up to the power grid or telephone. Telecom will not connect a phone unless they have proof of ownership of the house and proof that the house has Council Building Approval. The connection fees for the phone on a rural property may also be prohibitively expensive.

A solar electric installation needs to be carefully planned. The amount of power going into the batteries from the charging source needs to be more than the outgoing power to run lights and appliances. If in the long term the incoming power is equal to or less than the outgoing power the system is doomed to failure.

The size of the battery bank must be carefully considered. Bigger does not mean better. You cannot meet increasing power needs by increasing only your battery bank size. Increasing the power coming from the charging sources has to be part, if not all of the solution to meeting increasing power needs. There is, however, an optimum relationship between battery bank size and charging source. This relationship must take into consideration the pattern of both charge and discharge cycles. The battery bank size needs to be scaled according to the general pattern of power usage and the size of the charging system (for example the number and size of the solar panels).

As a rough guide, it is recommended to have up to five days reserve battery storage without incoming charge

for a solar electric system and to have roughly 40 watts of solar panel for every 100 amp hours of battery storage. If you include a suitable regulator in the circuit, you can have more panels in relation to the battery bank size, but not less. Lead-acid batteries have a continuous self discharge so that even in storage they need to be recharged at least once a month. Lead-acid batteries also need to be charged at a sufficiently high current to bring the voltage up to a float voltage. If the solar array (or combination of solar array and other charging sources) isn't large enough to achieve this, the battery bank is doomed to fail.

Inverters

So many people suggest buying one enormous inverter to run the entire house. This strategy places the function of anything electrical in the household at the mercy of one single high-tech piece of equipment which, according to Murphy's Law, is bound to fail (even though you were told that it was the most reliable inverter ever built). It makes a lot of sense to incorporate as many low voltage applications as possible and power the remainder with either dedicated inverters or one small inverter to cope with what is left.

I have decided to use two inverters in my home. I have a 1400 watt, 12 volt inverter for operating larger equipment and a 300 watt, 12 volt inverter that will operate at near optimum efficiency for my lower power-consuming appliances. None of my lighting is powered by either of these inverters. My lighting consists mostly of 10 watt and 20 watt quartz halogen lights and hybrid fluorescent lights (powered by their own dedicated inverters). My sound system, TV, washing machine and recently acquired laptop computer are all powered directly by my 12 volt battery bank.

For running direct DC equipment, a 12 volt system offers more advantages than limitations.

1. There is a greater range of equipment designed to run from a 12 volt DC supply than higher voltages in DC.
2. There is less battery maintenance due to fewer cells required for 12 volts.
3. The higher the voltage, the greater the risk of electrocution.
4. Above 32 volts AC and 110 volts DC a licensed electrician is required.
5. With a 12 volt system it is easier to start small and allow the system to grow when you can afford it.

•More facts and figures on viability, and in-depth details on installing a 12 volt stand-alone power supply are in the book *Energy from Nature*, available from the Rainbow Power Company, PO Box 217, Nimbin, NSW, 2480.

Grow bush tucker from home

by Chris Doucouliagos

South Oakleigh, Victoria.

I NTEREST in native food, or bush tucker, is growing. To enjoy bush food, however, you don't need to rampage through the precious bush. Bush food can be grown successfully in farms and in suburban gardens. I think that no native garden is complete without some native edible food plants.

Cultivating native plants adds variety to our diet, diversity to our gardens, and most importantly, helps preserve and expand our native species.

Do not expect yields from native plants to be great, or the taste of the fruit to be as high quality as in cultivated species. Cultivated species have been grown for up to thousands of years, while Australian species have been neglected. So much energy is expended on introduced species and so little on native species. As gardeners and conservationists we should try to redress this imbalance. Cultivating native food is a pioneering act — there will be defeats as well as victories.

There are three guidelines for bush tucker. Take no fruit from protected areas. Where sampling is legal, leave the area in the state you found it. Avoid any unknown species.

The following are three of the many categories of native plants bearing edible food.

Austromyrtus species

Austromyrtus shrubs and trees are attractive plants,



Austromyrtus dulcis.

usually found growing naturally in moist protected areas. They are easy to grow, but require mulch and compost to do well. They can be successfully cultivated in southern gardens. Both *A dulcis* and *A tenuifolia* attract seed and fruit eating birds.

Midgen berry (*Austromyrtus dulcis*)

Distribution: coastal regions of northern New South Wales and southern Queensland.

Description: a small low spreading shrub, 1 m x 2 m. The dagger-shaped leaves (2 cm long), are silky and a beautiful pink colour when young. White fluffy flowers are borne, followed by round berries. The berries are small (1 cm across) and are brownish-white or mauve, with black dots. They are sweet, aromatic and very tasty. Flowers and berries are borne in autumn and winter.

Cultivation: plant in a sunny or semi-shaded area, in well drained soil. Grows and bears best in rich soil. An application of compost, twice per year, is highly desirable. The plant should be mulched, and watered in drier months of the year. Requires protection from frosts in southern States, next to a wall, or along a driveway fence should be satisfactory. Also suits coastal areas.

Propagation: seeds, stem cuttings, nurseries.

Culinary uses: one of the tastiest native foods. It is excellent raw, mixed with ice-cream, or in jams.

Austromyrtus tenuifolia

Distribution: New South Wales and south-eastern Queensland.

Description: a small to medium shrub, up to 3 m x 2 m. White flowers borne in summer followed by small fleshy berries (1 cm across). Berries produced till autumn.

Cultivation: requires a damp sheltered location, in well drained soil. Best grown under some shade. Mulch is necessary and the plant should be watered in drier months. Compost or manure should be applied annually.

Propagation: seed; cuttings; nurseries.

Culinary uses: best in jams.

Scrub ironwood (*Austromyrtus acmenioides*)

Distribution: rainforests in Queensland and New South Wales.

Description: a small to medium bushy tree, 5 m to 18 m tall, with attractive smooth and brown bark. Dark green oval leaves, up to 8 cm long.

Cultivation: as with other species above.

Propagation: by seed.

Culinary uses: the long leaves are used to make tea. The berries are edible but bitter.



Billardiera scandens

Leaves of the small-leaved myrtle, *A fragrantissima*, can also be used for tea. Scaly myrtle, *A hillii*, has sweet and tasty berries (both have similar cultivation requirements to the other species above).

Billardiera species

This is a group of hardy endemic climbers commonly referred to as apple berries. They are well suited to southern States — *B scandens* and *B cymosa* grow and fruit well in Melbourne. Members of the species are popular in Europe. All the species listed below attract seed-eating birds. The

species below are best grown along a trellis.

Sweet apple berry (*Billardiera cymosa*)

Distribution: dry moist regions of New South Wales, Victoria and South Australia.

Description: a frost-hardy, slender, twining climber (1 to 2 m tall) with slender dull-green leaves. It bears 2 cm long, mauve or pink bell-shaped flowers, borne in spring and summer. These are followed by 2 cm long reddish berries.

Cultivation: plant in moist, well drained soils, in sunny or semi-shaded position.

Propagation: seed; cuttings; nurseries.

Culinary uses: best in jams.

Common apple berry (*Billardiera scandens*)

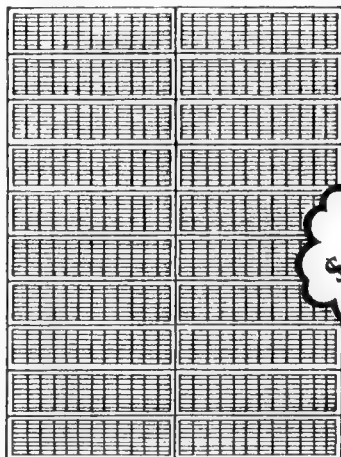
Distribution: all eastern States, from Tasmania to Queensland. Usually found in moist eucalyptus forests.

Description: a hardy slender climber or ground cover, 2 m to 5 m. Greenish-yellow bell-shaped flowers, 1.5 cm to 2.5 cm long, followed by cylindrical fruit, 2 cm to 3 cm long. The fruit is borne all year round, with the main crop in late spring or early summer.

Cultivation: plant in full sun or semi-shade (best grown in full sun), in well drained soil. Tolerates most soils.

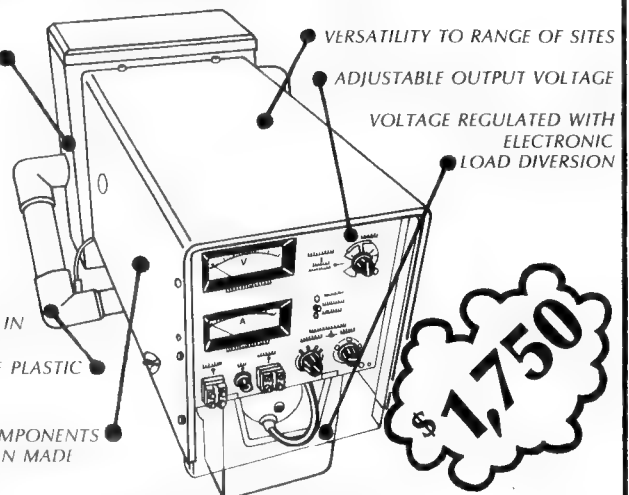
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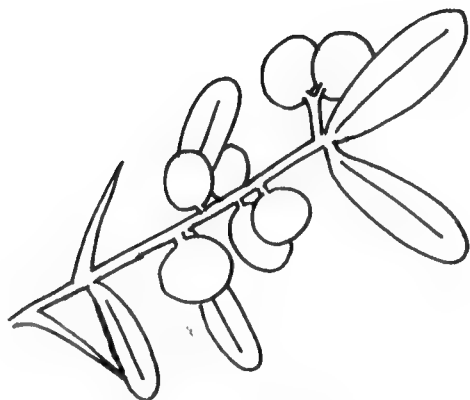
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Eremocitrus glauca.

Propagation: seeds; cuttings; nurseries.

Culinary uses: raw; best in jams.

Purple apple berry (*Billardiera longiflora*)

Distribution: cool moist and sheltered forests, in New South Wales, Victoria and Tasmania.

Description: a slender, twining climber, to 1.5 m high. It has graceful yellow-green bell-shaped flowers, which turn purple. Flowers are formed in late summer, followed by violet-blue fruit, 2.5 cm long, ripening in autumn.

Cultivation: plant in full sun or semi-shade, in moist, well drained soil. It requires watering in drier months and prefers slight acidity.

Propagation: seeds; cuttings from half-ripened wood, taken in spring or autumn; nurseries.

Culinary uses: raw; excellent and colourful in fruit salads.

Citrus species

Native citrus-type trees produce edible fruit which are smaller than cultivated varieties. They are suited to dry areas, particularly in northern Australia.

Native cumquat/desert lemon (*Eremocitrus glauca*)

Distribution: Queensland and north New South Wales, dry forest regions.

Description: a large prickly shrub or small tree, to 5 m, with a brown bark. Leaves are sea-green and grey underneath, 3 cm to 4 cm long. Small white and sweetly scented flowers are borne in spring (or after extensive rains), singularly or in clusters. These are followed by a heavy crop of small (1 cm to 2 cm), yellow fruit, round or lemon shaped. The fruit is borne in summer. The pulp is enclosed by a thin edible outer rind.

Cultivation: suited to arid and semi-arid climates and tolerates saline soils. Plant is very drought resistant.

Will withstand extremes in temperature — cold winters and hot dry summers. Plants are slow growing — as little as 1 cm per annum. Once established, however, growth accelerates. Grows best when watered and a nitrogen rich organic fertiliser is applied. Plant is difficult to cultivate in the southern States.

Propagation: plant suckers from a rhizomatous stem; budding on to a citrus rootstock; seed.

Culinary uses: fruit has a pleasant acid/sour taste and is best in marmalades, or drinks.

Native orange (*Citriobatus spinescens*)

Distribution: Queensland, New South Wales and Northern Territory rainforests.

Description: not actually a citrus. It is a small or tall thorny and twiggy shrub, 2 m to 5 m tall, with 1 cm to 3 cm long shiny green leaves. White flowers are followed by small hard yellow/orange coloured fruit (1 cm to 3 cm).

Cultivation: requires a protected and shady area.

Propagation: seed.

Culinary uses: best in jams.

Other citrus type fruits are borne by the native lime (*Microcitrus australis*) and the finger lime (*Microcitrus australasica*). Both are found in Queensland and New South Wales rainforests. *M. australis* is a small to medium sized tree, bearing round green fruit, up to 5 cm across. *M. australasica* is a medium shrub or small tree, bearing cylindrical green fruit to 6 cm long, with a refreshing sour taste. Fruits from both are eaten raw or in marmalades.

There are many other native plants bearing edible produce, including berries, fruits, nuts and vegetables. Growing your own bush food is a challenging and rewarding experience. You will enjoy the flowers, the fragrance and the fruit.

access

Dunlite windmill parts

Natural Technology Systems, of Prospect in Adelaide, South Australia, is now the sole Australian distributor of spare parts for Dunlite wind generators. Natural Technology Systems holds an extensive range of new, and some secondhand, parts and you can write to them for their parts list which has prices and part numbers. Some parts are in small quantities but Natural Technology Systems intend to keep one sample of each part for reproduction. Long live Dunlite!

NTS are members of the Appropriate Technology Retailers' Association of Australia, and their address is 120 Prospect Road, Prospect, South Australia, 5082; telephone (08) 344 7298.

Clean, renewable hydro power

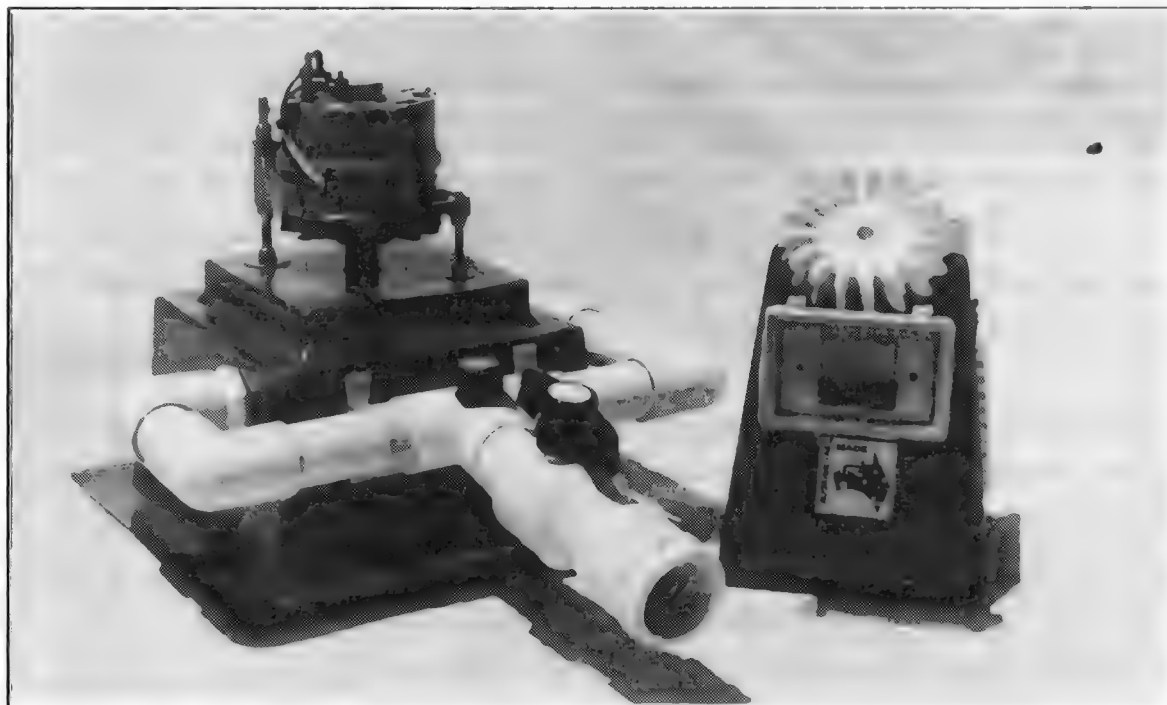
In previous issue of Earth Garden we published details of the Rainbow Power Company's new micro hydroelectric generator. This month, as promised, we have information on the other new pelton wheel released onto the market in recent times. This small unit is manufactured by Melbourne business, Lateral Technology.

by Geoff Collins
Cheltenham, Victoria.

Pelton wheel

The pelton wheel is manufactured from polyester resin and is attached to the alternator by a stainless steel shaft. Water-proofing is achieved by a slinger where the shaft passes from the wet area to the alternator compartment. Exhausted water falls to the base of the turbine and can be collected for household use, irrigation or returned to the creek via a pipe. Care must be taken not to cause erosion by bad drainage of the exhaust water. The drive pipe should be 50 mm poly pipe (a 38 mm pipe gives a reduced output).

THE design of the Lateral Technology 200 watt 12 volt/24 volt water turbine is inspired by the early hydro-systems of Karl McLaughlin, many of which are still in service around Nimbin in New South Wales. Karl is a founder of the Rainbow Power Company and developed their excellent new hydro system.



The Lateral Technology water turbine, with alternator cover removed, and the resin pelton wheel resting on the top of the cover.

Turbine construction

The Lateral Technology water turbine consists of a standard automotive alternator directly driven by a small pelton wheel and combined in a fibreglass housing. The pelton wheel is driven by two opposed jets, and the plumbing is standard high pressure PVC pipe. The jets are modified brass pipe fittings, and a ball valve and pressure gauge are also provided.

Alternator

The alternator is housed in a dry well ventilated compartment and is fan cooled. It is a standard Holden car alternator and is reputed to be the most common unit in Australia, so spare parts are readily available. If it's not immediately available from your local auto-electrician then you are bound to find what you need at your local car dump.

A standard, off-the-shelf regulator is used but a

remote voltage adjustment modification has been made. Adjustment to allow for voltage drop can be made at the meter box on the front of the turbine. Once the turbine is started the alternator will often self excite, (that is, start to produce electricity without outside help) and should it fail to self-excite this can be done manually by pressing a button for one second (all this excitement!). A volt meter is fitted in a waterproof junction box.

Operating requirements

You need two things to operate a water turbine: water and head (height of water source above the turbine). To decide if you can run a turbine you need to make two measurements: water flow and the amount of head available. The greater the head and flow, the greater the output of the turbine.

A simple method of estimating the flow is to find or make a small dam on your creek and try to get all the water to go over the dam wall at one place. Take a container of a known capacity, say 20 litres and with a stop watch time how long it takes to fill the container. Do it several times and average the results. Then calculate the flow in litres per second. This is rough but effective.

The head can sometimes be calculated from topographic maps. An altimeter can also be used. A simple survey can be conducted with a spirit level attached to a pole and sighted to a long pole with measurements marked on it. This is best done working downhill. This method of survey is also described in many books.

Minimum pelton wheel requirements

When you have these calculations contact your turbine supplier and your expected power generation capacity can be worked out. Generally, flows of less than 1.5 litres per second and heads of less than six metres are not suitable for pelton wheel turbines. I recommend the turbine is shut down when the batteries are fully charged and is run every second day or as required. This saves unnecessary wear and tear as the alternator brushes and bearings will wear out and need periodic replacement. The Lateral Technology water turbine is covered by a 90 day warranty.

If you have water and head, a small scale hydroelectric power system is the cheapest method of producing power to charge batteries and is ideally suited to hybrid remote power systems. The unit can be easily integrated with solar panels, wind, petrol and diesel generators.

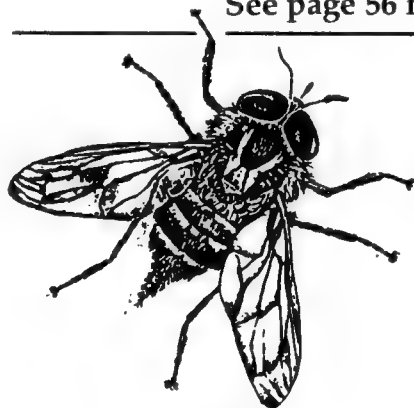
A 200 watt hydro electric system can, in 24 hours, generate the same amount of power as 14 X 42 watt solar panels for 8 hours on a sunny day, and hydro goes on at night and when it's cloudy and raining. As you can see the capital outlay of \$950 for the water turbine is much more cost effective than 14 solar panels. Hydroelectric power systems are available in many sizes and power output capacities. 240 volt 50 Hertz plants are also available but they are not cheap. Installation is very expensive but they are available. Advice and information regarding the 200 watt 12/24 volt water turbine can be obtained by calling Terry Conway on (03) 583 0348 or writing to Lateral Technology at factory 2/16 Charlton Ave, Cheltenham, Victoria, 3192.

ORGANIC CONTROL OF CommonWeeds

by Jackie French.

Jackie French's latest book gives a complete guide to controlling 'weeds'. Learn how to make a weed-free garden out of weeds, and use weeds as pesticides, mulch and compost. This complete growing strategy is an important addition to the library of any organic gardener or farmer.

See page 56 for ordering details.



ORGANIC CONTROL OF Household Pests

by Jackie French

A guide to using and growing your own chemical-free organic repellents, baits, sprays, and lotions. The essential text if you don't want to resort to ozone-destroying cans of chemicals, written in the usual readable, no-nonsense style of regular Earth Garden writer, Jackie French. Hot off the presses for people who prefer the pleasant bouquet of cedronella to the acrid stench of Mortein. Available now from EG.

**\$14.95 POSTED, FROM EARTH GARDEN — SEE PAGE 56
FOR ORDERING DETAILS**

Coping with isolation

In EG 67 Gwen reminisced about her self-sufficient lifestyle on the family farm during the Great Depression. This month she remembers quitting the ratrace, for the Upper Murray region, before it became a popular idea in the late 60s and early 70s.

by Gwen Laker

Holt, ACT.

“LET’S go somewhere quiet,” my husband said. He was ill at the time so we sold our house, gathered up our goods and chattels, including our two children, and left the city for the bush.

The farm we bought is at the far end of a long green valley surrounded on three sides by mountains. At midday, they are a beautiful cobalt blue, but as evening approaches, they gradually turn to brown and take on rather a sinister appearance. Winding through our land was the river. Actually, it was the beginning of the Murray, but at this stage, it was narrow and clear, devoid of any of the pollution it’s saddled with as it flows through the various townships on its way to the sea.

We were 30 km from the nearest town. Ti-trees and willows grew along the river banks and here and there among the trees wombats had burrowed out huge caves. If

you thumped hard enough on the roof of one of these, you’d sometimes be rewarded with a grunt. These animals are usually quite harmless, living off roots and berries, but they are a menace to fences.

At one spot on the river a large flat rock jutted out over the water. It was big enough to sit or fish on, or just to lie there and soak up the sun. An enormous old crayfish lived underneath it but the children were never able to catch him. Once I caught a trout from here but not being experienced at fishing, I was at a loss to know how to kill him. The most humane way, I thought, was to hit it on the head with a stick, so that’s what I did.

It lay quite still, so after removing the hook, I threaded the stem of a bracken leaf through its gills and headed for home. Halfway there, it flipped out of my hand and lay gasping on the dust. Apparently I had only stunned it. I picked up another stick and hit him on the head again, only a bit harder. Quite sure that he was now dead, I picked him up and continued on my way. By this time, he didn’t look too appetising, so when I got home, I threw him in the



sink and turned the tap on to remove the dust. Would you believe it? Ten minutes later, he was frisking around like an otter. Well after all that trauma, I couldn't possibly eat him. I reckoned he deserved a break so I took him down to the river again and threw him in.

In one of the uncleared paddocks, stringybark, wild apple and white gum grew abundantly. They were so prolific that if you pressed your face hard up against the trunk of one, you could almost hear the murmur of the sap as it made its way upwards.

In spring, there were armfuls of wild flowers: green and white bush orchids, miniature grevilleas with their spider-like orange flowers and buttercups yellow enough to tint your chin. I also found a delicate white clematis clambering over an old stump and a purple sarsaparilla struggling over a dead log. The valley was a beautiful place, wild and unkept with only enough land cleared to serve our wants.

We planted potatoes and grew so many tomatoes that we couldn't sell them all. We also had several rows of raspberries in the garden, and the first season had an enormous crop. We ate as many as we could, fresh with cream, and the rest we made into jam. Being virgin, the soil was so rich with its own nutrients that it would grow anything. We also ran some cattle, but I'm petrified of any animal bigger than a cat, I avoided them as much as possible. I was most upset though when a visitor shot a wallaby that had become quite tame.

Although the children caught the bus to attend school in the nearest town, 30 kilometres away, I only visited on rare occasions, such as going to the doctor or to pick up a few groceries. There was no need to go often. If my visits to town were rare, it was no big deal. Most country folk kept a good supply of sugar, flour and tea on hand and there was always the mail two or three times a week. When I went to the valley to live, I too stocked up on the essentials, and as an added bonus I had the phone. My good neighbours could always be relied upon to bring out anything from town.

No one could starve in the valley if they used their common sense. We had cows to provide us with butter and milk, fish in the river, rabbits everywhere and a paddock full of corn and potatoes. We had poultry, a vegetable garden and an adequate supply of preserved fruit.

There were strawberries and raspberries and close by the river blackberries grew wild. What more could we want? Once a neighbour killed a beast and we bought a quarter of

it from him, then we salted it down and kept it in a large wooden cask to be used whenever we felt the need for red meat.

As for the isolation, that didn't worry me. My 'isolation' was from the noise, pollution and frenetic activity of city life — 'isolation' often seems to have unnecessarily negative connotations. My closest neighbour lived on the other side of the river, but as the only means of crossing it was via a 'flying fox', and as I'd no wish to be stranded 15 feet in the air in a wire cage half way across, I never attempted the journey. Besides, they had cattle and an extremely savage bull.

During my period of isolation, I became an avid bird watcher. These creatures fascinated me and were a never-

ending source of interest. One afternoon, in the distance, I thought I saw what appeared to be a giant magnolia tree covered in blossoms. As I approached, a cloud of sulphur crested cockatoos rose and disintegrated into the air. These are beautiful birds and almost as intelligent as humans. When they are feeding, they always station at least one bird on the top of a tree as a look out to warn them of any approaching danger. Unfortunately, they did considerable damage to our corn crops.

We also had a wonderful array of parrots: blue

winged, red rumped, king and crimson rosellas, all brilliantly coloured with a sheen as smooth as silk. Besides these, there were the smaller birds; finches, swallows and lovely little blue wrens with bodies no bigger than a walnut and legs no thicker than a size ten knitting needle.

Although it is well over 25 years since I left the valley, I still remember it with nostalgia. Great changes have taken place, according to neighbours. The flying fox has been replaced with a bridge, the narrow cutting down into the valley has been widened, and the truck which used to collect cream from the dairy farmers along the river has given way to enormous road milk tankers.

Let us hope that within the next 25 years, the beauty of the Biggara Valley will not be destroyed by further developments.

My two years of living in the valley was one of the most rewarding experiences of my life. With no outside distractions, there was so much to see and do that it was a never-ending learning process. Such a thing as boredom never existed for any of us and if friends and acquaintances sometimes asked, "But how could you?" I would just reply, "You'll never know what you've missed."

What if it rains?

If Camille and I had a dollar for every time someone's said to us, "But what happens when it rains?", when we've been talking about mudbrick houses, we'd be able to pay off Alan Bond's debt. Now we know the best retort.

by Bob Rich

Moora-Moora Co-operative, Healesville, Victoria.

FRIENDS of mine were moving into their brand new mudbrick house. The removalist's van arrived, with a middle-aged driver and a young offsider. The young bloke looked at the house. "Hey, what's it made from?"

"Mudbricks," I told him.

"Mudbricks? But what happens if it rains?"

"They go inside and stay dry."

"But won't the house fall to pieces?"

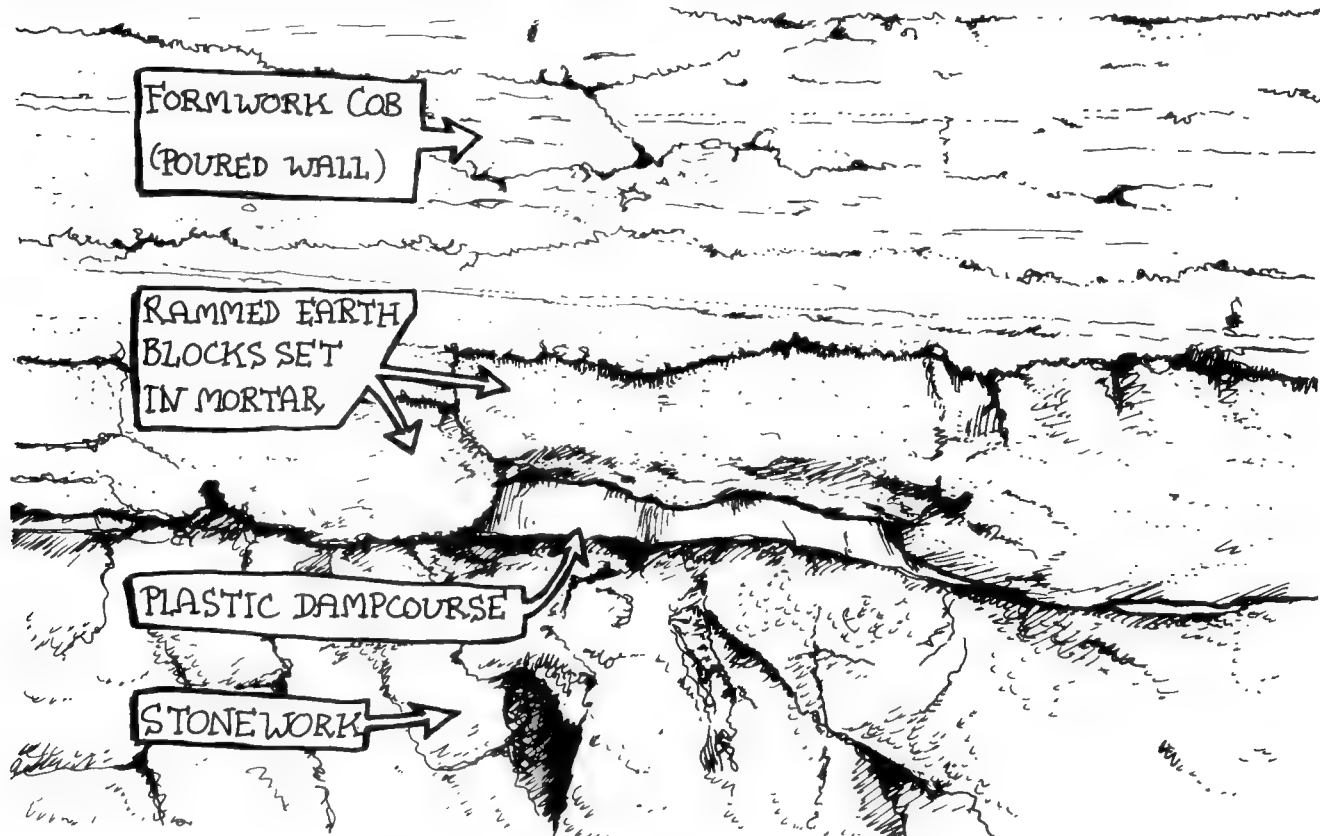
Well, no, earth walled houses don't get damaged by rain. Not if they are properly designed and built.

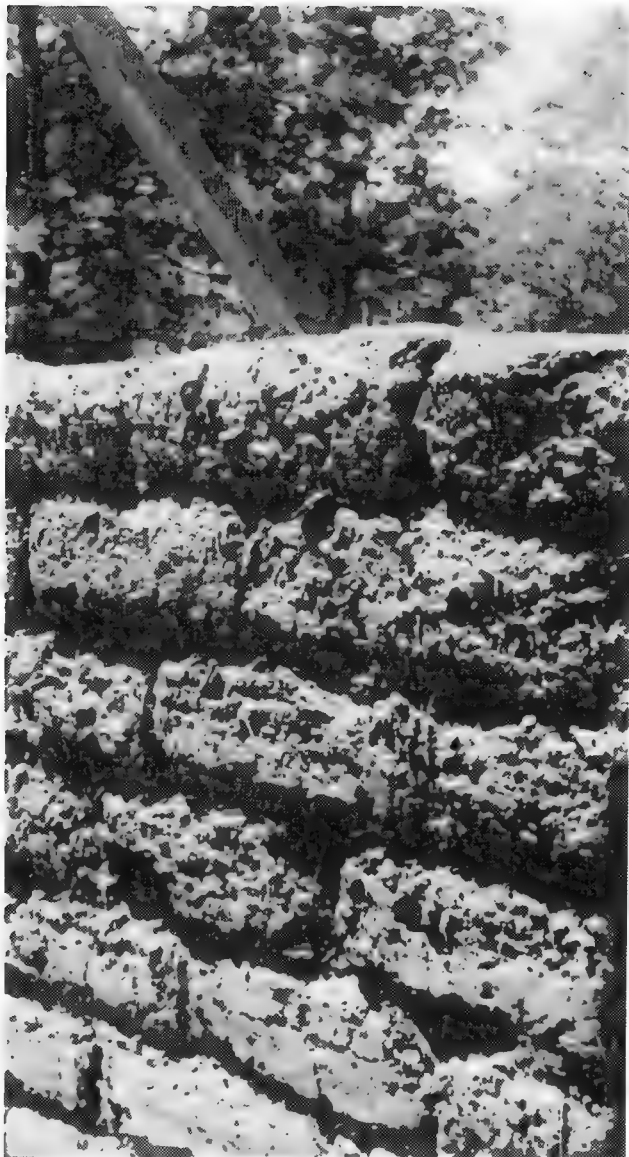
I started building a mudbrick chookhouse last autumn, but ran out of time before the winter rains. The half finished walls have been standing out in the weather throughout a particularly wet winter and spring. The rain

hasn't done them any good: there are signs of weathering. I might have to level off the top of the wall with a spade before going on with the job. But there is no structural weakening, and nothing a good coat of render won't fix when the shed is finished.

There is a studio I started to build a few years ago. I had to leave it off when I suffered an injury. When I recovered, I did a full time course for a year, then there were a year and a half worth of jobs to catch up on before I could get back to building. This meant that a partly completed rammed earth wall was exposed to the weather through three winters.

During this time I managed to get hold of some nice big secondhand windows. They were too high to go on top of the rammed earth walls, so I had to cut some wall out. I found that the top 50 mm or so of the wall had gone soft, but below this it was as hard as a rock! It was so good that I cut it out in blocks which I laid in another place.





The weather side of an incomplete mudbrick wall left through a wet winter: damage is only superficial.



Top view of forms set up for formwork cob. Shown are sections of three year old rammed earth with the top 50 mm scraped off, and a block of rammed earth, cut from elsewhere and laid in mortar.

Both these 'accidental experiments' show that rain sitting on top of a wall is damaging, but a well made earth wall stands up even to this.

Normally, the top of the wall is protected by a roof. Rain can only land on the vertical outside face. I know of a 6 metre high unrendered mudbrick house which has stood in a fairly high rainfall area for about ten years with no visible damage.

Water from above is not usually a problem. Water from below is. I wouldn't build an earth walled house in a flood-prone location. To make your wall last, it is essential to give it a strong support, and to protect it from rising damp. This means that you have to build on strong footings (usually

reinforced concrete strip footings or a concrete slab, but I once built a hut on footings of stone set in clay, and 12 years later it is still standing). On top of this you need a masonry wall, with its top at least 300 mm off the ground. It can be concrete, stone or brick, and should be the same width as the wall. Above this you need a positive dampcourse. A layer of plastic (the stuff they put under concrete slabs) is quite good enough. The earth walls start from the plastic up.

Some soils are less weather resistant than others. They can still be used for building. However, it is necessary to protect the wall's outside face with a good coat of render. This is good practice even where not strictly necessary. So, what happens if it rains? You go inside to keep dry.

Growing kiwifruit at home

Now is a good time to start thinking of a spot to plant kiwifruit. If you've got some bush poles lying around waiting for a useful purpose in life, you could make an overhead pergola, and dig in plenty of manure and organic matter underneath it. By mid-winter it'll be broken down nicely, ready for planting this low maintenance, prolifically fruiting vine.

KIWIFRUIT or Chinese gooseberry (*Actinidia chinensis*) originates from the forest margin areas in the Yangtze Valley of China. It is not related to the common gooseberry. The development of Chinese gooseberry by horticulturists in New Zealand accounts for the name kiwifruit. Many of the kiwifruits sold in Australia are imported from New Zealand.

Besides being eaten fresh, kiwifruit can be bottled or used in jams, pickles and chutneys. The vine is deciduous and ideal for training on pergolas. It has attractive red furry shoots and bright green leaves. Although the vine takes three to four years to start bearing, it continues to produce for 20 to 40 years.

Climate and soil

Kiwifruit can be grown in most areas of Australia, although it prefers a mild climate similar to that for passionfruit. Very hot climates reduce yields. Heavy spring frosts can affect blossoming, damaging flowers and young shoots.

Kiwifruit prefer neutral soils but are adaptable to mildly acid soils and to alkaline soils which are found throughout many parts of the country. A friable sandy loam with good drainage is ideal.

Kiwifruit produce soft succulent shoots that are brittle and prone to wind damage. Windbreaks are necessary to protect young shoot growth and prevent vine rub blemish on young fruit. Young plants are especially susceptible to damage. A warm, protected north-east facing site is ideal.

Pollination

Kiwifruit have separate male and female plants. It is impossible to distinguish between male and female plants until flowers are produced. Female flowers have a small swelling at the base of the petals similar to that of pumpkin flowers.

When buying kiwifruit, buy both a male and a female plant. One male vine is usually sufficient to fertilise up to eight female vines. Alternatively, some nurseries sell female plants with a section of male plant budded or grafted on.

Varieties

Haywood, Abbott, Bruno, and Monty are the main

female varieties. Haywood is regarded as the premium variety because it produces the largest fruit, although it takes longer to start bearing. It is also less vigorous, reducing the amount of pruning needed. Bruno is the best for bottling because its long, round fruits are easier to slice. Monty is a heavy cropper, reducing fruit size. Abbott produces medium-sized fruit.

There are two male varieties, Matua and Tomuri. Matua is an early flowering male suiting Abbott and Bruno. Tomuri, with its later flowering, is best for Haywood and Monty.

Many nurseries sell unnamed varieties. Buying a named variety ensures you know what type of fruit the vine will produce.

Propagation

Several propagation techniques can be used if you prefer to grow your own plants rather than buy from a nursery.

Seedlings can be used as rootstocks and budded or grafted to the desired variety. Seedlings are very prone to damping off and can be difficult to raise. T-budding in the same way as for fruit trees is satisfactory. Budding is best done late in the growing season, usually about March. Whip and tongue is the most popular grafting technique and is best done in late winter, usually July.

Softwood cuttings can also be used for propagation. They root more reliably with a misting unit and heating of the rooting medium. Take cuttings between November and March.

Trellis

A trellis is essential to support kiwifruit vines. Overhead pergolas or T-shaped trellises are best. Each vine needs about six to eight metres of trellis space.

A wide range of materials can be used for construction. Posts 2.4 m high set 60 cm into the ground give a 1.8 m high trellis. Timber or pipe cross-members mounted between the posts carry the wires. Space the wires 40 to 60 cm apart.

Build the trellis before planting to avoid damaging plants.

Planting

Begin soil preparation several months before planting. Dig plenty of organic matter or manure into the soil to improve structure and provide nutrients for the growing plant.

Like all deciduous trees and vines, kiwifruit are best planted in mid-winter while dormant. Potted vines available from nurseries throughout the year can be planted during the growing season provided care is taken with watering and shelter.

Space the vines six to eight metres apart. Dig the hole large enough to accept the potted plant. Remove the pot and place the plant into the hole, firming the soil around the plant. Water lightly to consolidate the soil. Do not use fertiliser at planting because it can cause root burning.

Pruning and training

Begin training kiwifruit as soon as growth starts. Select the strongest shoot and train it to a stake to prevent it breaking off. Remove side shoots as they develop. The strong shoot forms the main trunk of the vine. With good growing conditions, it will reach the top of the trellis in the first season.

The main shoot is then trained horizontally along the trellis. A side shoot developing near the top of the trellis can be trained in the opposite direction. The two shoots form the main arms of the vine. Side leaders that develop during the year can be trained across the trellis. Prune out excess growth or shoots that cross over. The main pruning is best done in winter after fruit has been harvested — about July. Late pruning causes bleeding from cuts.

Fruit is produced by the first three to five buds of the current season's growth. On cropping plants, the aim is to keep the cropping wood close to the leaders. Fruiting laterals are pruned each winter to the second bud beyond the previous season's fruiting buds. Prune out overcrowded or old straggly leaders and train young shoots as replacements for old leaders. Summer pruning and training can be used to keep vines more open and manageable. Cut back long laterals to several buds beyond where the fruit is developing. Male plants are normally summer pruned after flowering to encourage fresh young growth that will carry flowers in the following season.

Fertilisers

Kiwifruit are heavy feeders and need a plentiful supply of nutrients. The quantities of fertiliser needed vary with the size of the vine and fertility of the soil.

In spring, apply a slow-release fertiliser such as blood and bone, at about 1.5 kg a vine. Follow this with more fertiliser in December. Use about 0.5 kg a vine in the first year and increase the rate by 0.5 kg a vine each year up to a maximum of 4.5 kg for mature vines.

Animal or poultry manures are ideal fertilisers for

kiwifruit. Be sure the soil is moist before applying fertiliser or manure, and water in thoroughly to avoid root burn.

Watering

Kiwifruit have a shallow, fibrous root system and react quickly to dry soil conditions. They quickly wilt, leaves fall and growing tips dry.

Regular watering is essential during hot summer weather, especially with young plants. Watering every other day is often needed. Once vines are established, they withstand droughts better but yields are reduced.

Mulches are essential to conserve soil moisture and keep the shallow root system cool. Mulches also prevent weed growth. Vines are susceptible to collar rot, so mulches should be kept 20 cm clear of the trunk.

Pests and diseases

Pests and diseases are rarely a problem with kiwifruit. Light-brown apple moth grubs occasionally cause damage by chewing a few leaves, but they are easily controlled. Red spider mites are sometimes found sucking sap from the leaves, but naturally occurring predator insects usually keep them under control.

Harvest

Kiwifruit normally start bearing in their third or fourth year, but is usually about the ninth year before vines are in full production. Fruit normally ripens in May to June. Then, it is juicy and sweet, its flesh firm but not hard. Fruits soften and ripen further with time.

Fruit can either be picked and used as needed during May to June, or picked and stored in the refrigerator. Discard shrivelled, deformed, damaged or softening fruits, and make sure they are dry before storing them. Fruit can be kept for several months at 0° C provided they have not started to ripen on the vine. Fruit for long-term storage should be picked in mid-May when it is mature but not softening.

This article is based on material supplied by the South Australian Department of Agriculture.

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Natural form — admiring angophoras

by **Andrew Toth**

Watagan, New South Wales.

ON DEEPER soil they grow straight, tall and large. On rocky ground they respond to the challenge with a surprising variety of growth patterns. They are known variously as smooth barked apple, red barked apple, red gum, rusty gum, apple gum, orange gum and mountain apple tree.

Aborigines call them toolookar.* I just call them angophoras. Their botanical name is *angophora costata*. They grow on poor sandstone and clay soils and are widespread in the Sydney region. They were once classed as eucalypts, and even now are often mistaken for them. Their reddish exudate was used by early settlers for treating diarrhoea.*

Because they are held in low regard by loggers many fine specimens still remain. The accompanying photos were taken in the Lower Hunter Valley in an area of approximately one square kilometre.

But enough of the facts. Let's get on with the

fantasies! What brought these trees to my attention (apart from the fact that I live in a community of them) is the circuitous and unpredictable paths they often take (but they are not to be taken for humans).

More than that, it's as if the trees delight in these unexpected twists and turns. Just watching them releases me from the linear thinking which tells us that evolution is a slow, gradual, somewhat inevitable process.

Velikovsky says evolution, like the angophora (my analogy) is fraught with twists and turns and sudden unexpected events. (Should you wish to give your mind a good workout, read Velikovsky straight).

The unusual shapes of angophora branches make them ideal for interior decorating — on their own, or as a backdrop for, say, a dried flower arrangement, or as a framework for indoor twiners. They lend a feeling of spontaneity to the home.

In fact when giving one of these branches to my sister as a present I was tempted to present it as a Rorschach Test[#] because, quite simply, the angophora is a denial of any system or pattern. It's as if the tree is saying that the straight path, the easy path or the most economical path is not



"It's as if the trees delight in these unexpected twists and turns". Their unusual shapes also makes them ideal for interior decorating.

necessarily the best path.

According to modern engineering principles the angophora is not efficient. A high rise building arched at its centre, like many angophoras, would topple. Yet the angophora performs magnificently on this windswept rocky ridge where many species could not survive at all. Obviously it has its own standards of efficiency.

Sure, if it was more 'efficient' and grew straight it might reach twice the height, but it wouldn't be half the tree. Ah! All this, just from watching the angophoras!

Nature has indeed so much to tell us. What are the angophoras saying? Are they telling us that, like them, we too have to ride out the twists and curves in our lives? May

this little piece help prevent the ravage of the wonderful beings that dwell in our forests.

* E V Lassak and T McCarthy. Australian medicinal plants. Methuen, Australia.

*A test devised for analysing personality, calling for responses to ink blots and drawings. Named after Swiss psychiatrist, Hermann Rorschach.

Andrew Toth is currently engaged in regenerating a cattle grazing property in the Hunter Valley. Anyone wishing to help in anyway may contact him at 392 Watagan Road, Watagan, 2325.

Irreplaceable virgin forests

by Alan Thomas

Trentham, Victoria.

"HELLO Lesley. What a time to ring. We're just about to fax a press release about the gunshot incident in the Base Camp down to Channel 9 for the evening news."

With that comment, we all fell about laughing. Here we were in the new house on Jill Redwood's East Gippsland farm, in the middle of a high-pressure forest action.

Jill's off-hand comment to her friend seemed to highlight the breathtaking intensity of the direct action which began on 8 January in the valleys of East Gippsland's National Estate Forests.

On the first day of action 53 people were arrested for 'trespass', after halting work for several hours in the logging 'coupes'. There was saturation media coverage and by the end of that week there had been 129 arrests. It was just about the 'hottest' news story in the State, and the Federal Government was finally sitting up to take notice.

Background

The National Estate forests in Victorian East Gippsland region are untouched, old growth forests. They are home to Victoria's rarest mammal, the long-footed potoroo, and the trees in these magnificent forests predate European settlement.

They are part of the same forest system as the new national parks such as Errinundra and Rodger River, and the disputed National Estate forests of south east New South Wales.

When the Victorian Government finally created the Errinundra, Rodger River, and other national parks two years ago, they drew an artificial boundary through the forest which excluded the National Estate forests being fought for.

The East Gippsland Coalition and local environmen-

talists have struggled for ten years to save these pristine forests for future generations of Australians. It took 129 arrests and 20 people languishing in Pentridge and the Melbourne City Watchhouse for the Victorian Minister for Conservation, Forests and Lands, Mrs Kay Setches, to admit that she was "prepared to make concessions to save the National Estate forests".

A walk in these superb forests is a moving experience for anyone and the sight and sound of a 300 year old mountain grey gum or 300 year old stringybark or shining gum being felled with a thunderous crash leaves a sickening feeling in the pit of your stomach.

Goongerah

In editions of Earth Garden during 1989, readers have responded enthusiastically to the stories and pictures of Jill Redwood's farm at Goongerah, and Camille and I were surprised and delighted to find that the Base Camp for the forest action was at a property adjoining Jill's farm.

In fact, Jill's nearly finished house, featured in the mid-foreground of the outside back cover of EG 67, became the campaign nerve centre from which the media and logistical support was arranged.

Camille, Tane and I arrived at Base Camp on the 6 January, and it became evident immediately that lack of co-ordination from the East Gippsland Coalition was a serious problem. The Coalition's resources were stretched to the limit, and Sunday the 7th saw us co-ordinating and digging the pit toilets for the camp, and wondering when some co-ordinating structure was going to emerge. It was forest action self-sufficiency style, although to the outside world, the impression was of a tightly run, committed and efficient band of conservationists who were determined to save our National Estate Forests.

The State Government leased the National Estate forests to the logging contractors for the princely sum of one

dollar for six months. On the basis of this lease, which was not released to the public, the police arrested people for trespassing in the coupes and they were taken in police vans and mini-buses on the two hour journey along the winding Bonang Highway to Orbost. There, they were processed and released later in the day. If the charges ever make it to court, which is doubtful, environmentalists face a likely fine of from \$50 to \$100.

Base Camp

Life in camp moved into a regular rhythm during the forest action. Evenings were spent in drawnout three to five hour meetings to plan the arrestable actions of the following mornings. Consensus decision making, in which every single person must consent to the proposed action (not just the majority) is exhausting at the best of times.

For instance, one day the entire camp took six hours to decide whether to put out a press release. The time was spent debating how it would look in the media if the timber industry did not join us in making a joint statement condemning the shotgun blasts mentioned above.

Those six hours should have been used to plan, and prepare equipment and banners for the highly visible action required the next day to keep the interest of the large contingent of journalists. Many of the journalists had been dragged back to the forests after returning to the city earlier in the week.

Faces

Some of the personalities in camp helped to maintain a strong morale and sense of purpose. Bullfrog was one of the stars. He arrived in camp unannounced one night in a yellow and green van — the same colours as the Queensland frog depicted on the side of his instantly identifiable machine.

Bullfrog just set up his food tent, brewed up the first batch of his invigorating chai (cardamom tea), and quickly assumed the mantle of camp cook. I think the most important people in the action were Bullfrog and Jill Redwood, who always had a refreshingly down to earth approach to whatever task was at hand.

When people were off at the forest actions Bullfrog would be preparing lunch for anything up to 70 people. He'd deliver it, in that trusty van, every day, even if it meant detouring through the bracken on the muddy sides of the Errinundra Rd to beat a path around the fully laden log trucks set up to blockade the blockaders.

At night people would gather in camp to recuperate, plan the next day's action and review the day's successes and failures. Bullfrog would be there to feed the hungry: the



Bullfrog: Camp Cook and head of the morale and entertainment department.

green, utterly non-violent army was marching on its stomach!

Dean Jefferies was the cameraman — not for a TV network, but for the forests. Dean filmed all the forest actions and I'm sure that footage will become a valuable archival document when historians are assessing the environmental battles of Australia's late 20th Century.

Although in the forest solely to film events, like all the other TV journalists, Dean was arrested one day, and police and loggers tried to make filming difficult for the 'greenie camera man'.

Benny Zable, another character in camp, is an experienced environmental campaigner. Many people know Benny's costume — he wears a full face gas mask during actions and there are such slogans as 'consume, be silent, die', sewn onto his stark black costumes. I first saw Benny in an eerie setting: early morning in silence on the Franklin



The great inspiration: Bob Brown second from right with (from left) Chris, John Olle, Jill Redwood, Antoinette Shanahan, Sharon East and Janet Rice.

River seven years ago. He performed his disturbing street theatre as a bulldozer-laden barge made its way through the line of protesters' rubber rafts.

Benny contributed vital knowledge and resources for banner-making, street theatre props and ideas for making the forest actions visually appealing to the assembled media.

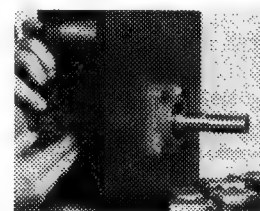
He, along with 19 others, spent over a week in maximum security, for refusing to sign bail documents which denied him the right to return to the National Estate forests. One evening at the Melbourne Remand Centre we greeted the other 'inmates' who emerged from prison after their week of fasting and confinement. Benny was still inside, and it was a sad time for us standing on the pavement cheering and waving to him. We could just see the outline of his figure waving back to us through the blackened security grilles.

Robert Burrowes was another important contributor. Robert is active in the Melbourne Rainforest Action Group and is writing his Phd on non-violent action. He had a canny knack of drawing together the best ele-

ments of discussions and proposals, and presenting one unified plan for group action. His experience in meeting procedures and group dynamics was a vital contribution to the campaign, and many new comers to environmental actions learnt from his example. Other Rainforest Action Group people, such as Len Constantini, Charlie Daniels and many others, really stood out as having experience and common sense to contribute.

THE HOMEBUILT DYNAMO by Alfred T. Forbes

Postpaid, airmail: \$85.00 Aus. HB/A4
Todd-Forbes Publishing ISBN 0-9597749-0-4



"What a delight this book will be to any lover of anything to do with diy, ingenuity, and devotion to the completion of a job once started. It is the complete pictorial history of how Alfred Forbes built a dynamo to power his house in New Zealand . . . Definitely a book to put on your list of wanted Christmas presents." — **Practical Electronics**

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"This is a fascinating book . . . An absolutely marvellous book for the true experimentalist!" — **Elektor Electronics**

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**Todd-Forbes Publishing, 627 West Coast Rd, Oratia
 Dept D7, P.O. Box 3919, Auckland, New Zealand**

Results

The forest actions maintained pressure on the State and Federal Governments. The Federal Government was anxious to play down disharmony so close to the election. We knew that here was a chance for the Federal Government to try to impress green voters: if it was fair dinkum about being seen as an environmental protector it would have to save the National Estate forests.

Although media coverage slowed as the actions progressed, and the number of daily arrests dropped to between 6 and 15, the fact remains that towards the end of January over 250 arrests had been made.

Tasmanian Green Independent MP, Dr Bob Brown, had visited the area, and received a lot of valuable coverage. It became clear that it was simply a matter of days until the Government made a big announcement.

It became a matter of trying to keep up the pressure, and numbers of arrests, until the Government announcement. East Gippsland Co-ordinator, Janet Rice, and other campaign workers such as David Moreton and Sharon East, kept up liaison with the Government.

Success

On 13 February Federal Cabinet announced that it had accepted a proposal hammered out by Federal and State ministers, with the wary support of the environment movement: an immediate three year halt to National Estate logging, and using the three years to study the area and industry before deciding whether to resume such logging.

Janet Rice, EGC Co-ordinator, described it to Earth Garden as "a short term gain". "It means that the forests are safe for the next three years because of an immediate halt to logging," she said on the day of the Cabinet announcement.

And what would happen after three years?

"They won't be going back into the National Estate forests. Attitudes will have changed enough in that time so that we're sure they won't even consider going back into these virgin forests," said Ms Rice.

The Federal Government will finance native plantations to provide timber, and the Department will find logging areas which aren't so precious. This may be the saving of a vital part of Australia's forest heritage, thanks to hard work in the cities, and direct action in the forests.

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EARTH GARDEN REVIEWS

Edited by Sophie Masson

The Natural House Book
by David Pearson, Fore-
word by John Archer
Collins Australia
rrp \$24.95, 288 pages,
large soft cover.

The Natural House Book is a vibrant manual of practical ideas and inspiration. After one reading I'm filled with ideas for improving and altering the style of our home — and it's not even finished yet. Whether you've lived in your home for donkeys' years, or you're still planning, and tossing around ideas, David Pearson's book is a great encouragement.

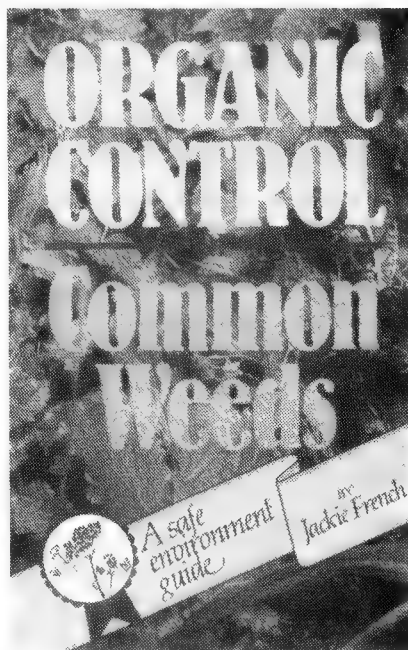
The book is for designing and creating a healthy, harmonious, and ecologically sound home environment. It is crammed with vibrant colour photographs of homes from every corner of the globe, and has important Australian contributions from John Archer.

Every room, from bathrooms and offices to greenhouses and kitchens, is examined, and there are lots of suggestions for making your home brighter, more natural, and replacing synthetic materials with natural alternatives. The first part of the book deals with 'The Natural House' and 'The Dangerous House'. The second section deals with the parts and elements of a house and shows how to furnish or build for health and the environment. The third section deals with the design of spaces in the home. The charts, appendices and index show what a comprehensive international project this book has been. Author, David Pearson, is a British architect and planner, and is currently Director of the eco and health consultancy, Gaia Environments. This book is a practical and attractive addition to any library.

**Organic Control of
Common Weeds**
by Jackie French
published by Aird Books
\$14.95 posted, from Earth
Garden (see page 56).

The latest book from prolific writer and Earth Garden columnist, Jackie French, is an excellent complement to her earlier book, 'Organic Control of Household Pests'. Aird Books have done a good job in presenting the 'weed' book in a similar style to the earlier one.

The book is, typically for Jackie, written in a wholistic — not piecemeal — way. Often we see books on organic subjects which adopt a very focused and narrow approach, but this book "... really covers much more than just controlling weeds without resorting to poisons (weedicides, herbicides and similar quick-fix solutions)".



The book's sections include Weed Management, Fighting Weeds, Using Weeds, an extensive list and description of Common Weeds, a thorough index and an excellent introduction to the book which highlights Jackie's first hand knowledge of the subject. Jackie obviously could not have established and maintained such a thriving productive farm at her home in the Araluen Valley of southern New South Wales without successfully achieving a 'weed balance'. That is, Jackie makes the point that "It often takes years to come to accept that we can co-exist with weeds." The trick seems to be achieving the right balance between obsessive eradication, and a productive farm or garden.

The book is available through Earth Garden (see page 56) and we're sure it'll be valuable for any farmer or gardener.

**Venomous Creatures of
Australia**
by Dr Struan K Sutherland
Oxford University Press

This is a very useful guide to a host of venomous creatures, such as snakes, spiders, scorpions and jellyfish. It is a field guide, with good notes on first aid. Looking at it right through can induce a mild sense of panic as you realise how many stinging and bites there are in Australia! A useful book to stash in your ruck-

sack when you are camping or hiking, or to have on your bookshelf at home. The author is very well known in the field, having developed an antivenin for the bite of the deadly Sydney Funnel Web Spider.

The Native Plant Expert

John Mason

**Australian Horticultural
Correspondence School
264 Swansea Rd, Lilydale,
Victoria 3140**

This book is available directly from the School for \$9.95 plus \$2.50 postage and packing. It has lots of information on a variety of Australian native plants, their care, planting and propagation.

There's information on size, habit, flowers, foliage, culture, soils needed etc. There's also a useful list of specialist nurseries, gardens, seed suppliers, courses, books, etc. I feel this would be a good book for any native plant enthusiast.

The only reservation I have is about the photographs included in the book — they are rather small and unclear.

Profitable Hobbies and How to Market Them

Carol Staines

**Pinedale Press,
2 Lethbridge St,
Caloundra, Qld,
\$5.90**

This is an excellent small book for those wanting to expand their income through the profitable marketing of their hobby. The author takes you through all kinds of marketing secrets, like efficient advertising, arranging goods, turnover, etc.

The second part has ideas for all kinds of moneymaking small businesses, like growing trees, using computers, making sweets, supplying bait — anything you can think of! Then there's also a small section on hobbies that will save you money — such as making cards, framing your own pictures, etc. This book is well worth buying, especially at such a reasonable price.

Season Tasks for The Practical Gardener by Peter Cundall McPhee Gribble/Penguin Books \$24.99

This book is subtitled 'using sensible organic methods' and that's exactly what this is about.

This excellent book goes right through the year, week by week, giving advice on what to do in the garden, whether planting or taking cuttings, harvesting, weeding, and a host of other gardening tasks.

As the subtitle implies, there's lots of sensible information on how to keep your garden, whether flower, vegetable or whatever, looking good without chemicals. The book is well written, clearly and concisely, and is an attractive production, with black and white illustrations and good colour photos.

There's also an appendix on such things as how to make that old organic gardener's standby, Bordeaux Mixture, cross-pollination of fruit trees and other subjects. A great book for all gardeners.

Expanding your Orchid Collection J N Rentoul Lothian Publishers \$34.95

This rather specialised book is part of a "Growing Orchids" series by the author. This one reviews the less common genera of orchids and covers such information as cultivation, identification, choosing varieties, etc.

There are 216 beautiful colour plates to illustrate the very comprehensive information in this book. Recommended for all orchid lovers.

The New additive Code Breaker by Maurice Hanssen with Jill Marsden Lothian Publishing

We are all familiar with being confronted by a bewildering list of ingre-

dients on the side of packets and tins. These additives may as well be a Hebrew for all we can understand them. But here is the code-cracker—a most useful guide to all kinds of additives, including colours, flavours, preservatives, and other things. Learn the truth about such ingredients as MSG (in small doses, has no bad effects at all) colours (most of them are quite safe, although tartrazine, used to produce a yellow colour, is rather 'suss' and aluminium (high intakes may be dangerous).

Keep it with you when you go shopping!

Song Of Gondwana Craig Robertson Penguin Books \$12.99

Gondwana was the ancient continent that once joined Australia, Antarctica and Asia. (By the way, the name means "Land of the Gonds" from a tribe in India, so it is wrong to say Gondwanaland). Then millions of years ago, the supercontinent disintegrated into its modern parts, a cataclysm inexorably slow and terrible in its progress.

This ancient cataclysm has unleashed forces which are still potent—or so they are experienced by the main character in this book, Lane, an amateur biologist. His retreat to the Otway Ranges to study birds becomes a strange journey into a hideously strange and dangerous past, a past that threatens to destroy him and the people he meets.

This is a time-slip novel with a difference, a parable of the vast forces of Nature and how its balance can be disturbed, not only by human doings, but by pressures and forces deep within itself. The ending is terrifying, as cataclysmic in its way as the destruction of old Gondwana. Great reading! I couldn't put it down.

**•Earth Garden Reviews
continued on page 55**

**•Earth People Write,
continued from page 7.**

A Tasmanian life

Dear readers,

I was reared on a farm at Ross, in the heart of Tasmania. The stone house was on four acres, and built in the early 1900s from sandstone quarried nearby. The family consisted of Mum (Emma) and Dad (Oscar Pearsall) and three girls, Doreen, Marjorie and Beatrice. Also living with us were Mum's brothers Alfred, who had just returned from World War I, and Harry. Father died when I was three, so I cannot remember him, but Doreen, being eight at the time, did, and Beatrice was a baby.

In the orchard we grew apricots, pears, quinces, plums, peaches, nectarines, apples, blackcurrants, gooseberries, strawberries and every kind of vegetable. We kept geese, ducks, turkeys, fowls, sheep, dogs, cows and a horse.

Uncle Alf rode the horse out into the bush of a weekend, and caught rabbits, hares and kangaroos to sell.

As we girls got older, before and after school, we carried the rabbits and other game around the streets to customers. The rabbits then were sixpence a pair and the kangaroos one and sixpence. Mother also made butter to sell, and as we grew, we made the butter and delivered it around the town. We also sold the milk and cream.

The butter was made the hard way. We always kept the buttermilk for making scones (or giving to the calves),

and the butter was washed in several lots of water before salt was added. Boiling water was poured over a large pine board and through a piece of cheese-cloth, followed by cold water. The butter was placed on the board, then kneaded with the cloth until all water was gone, weighed into half pounds and patted square, put into a butterpaper and delivered at a shilling a pound. We had no scales. A cup of butter weighed the half pound.

Plums were a shilling a bucket, apricots two shillings, as were the peaches and nectarines, and apples and pears four shillings a case. After school we wheeled them to customers on a barrow. Not many girls (or boys) do that now! And we walked over a mile to school, back home for lunch, then repeated it again. Now they can't walk one block.

I really loved my childhood, although we all worked hard. Soil fascinated me and always did. I am always looking at a plant and remembering when it was a seed and marvelling at the miracle. When I first married I moved several miles northwards of Campbelltown and started entering vegetables, pot plants, cakes, preserves, handcraft and photography in shows all around Tasmania and won thousands of prizes and nine silver cups. But people started to get jealous, so I gave it away and put my secrets of success into a book. That was published in 1965. Now it is in its third edition, and they are all over the world.

I live at Devonport now, on the

north-west coast, and I still love gardening. People from different clubs give me a visit many times a year just to look at my unusual plants, and collections I have in the home. I also travel to other towns and give demonstrations on how to make articles from waste. I have been doing a weekly column in the local newspaper for 20 years. It consists of four hints, and I've written a hint book too, and it's in its second edition. I have also written a garden book, my life story, and recently, "Tasmania and Beyond". They have all been written by hand and now I have rheumatism in my fingers. But I hate being idle and I just had to pass on what I know before it is too late, as I am a great grandmother now.

We are in this world to help one another, and although I only make a dollar per book, I don't care, as you can't take it with you. For the past three months I have read and reread 42 Earth Garden magazines that were given to me by a friend at Burnie. I must congratulate Keith and Irene Smith on their marvellous magazines. I have enjoyed them immensely and cut out all the things I like and pasted them into several scrapbooks.

This is my first contribution to your magazine and I hope many people will be able to relate to what I have written. I have lots of pen friends, so if any readers would like to write to me on any subject, please enclose a stamped addressed envelope as postage is so dear at present.

**Mrs Marjorie Bligh, 163 Madden St,
Devonport, Tasmania, 7310.**

... STOP PRESS ... STOP PRESS ... STOP PRESS ... STOP PRESS ...

ANM Ready To Build Newsprint Recycling Plant

Australia's first large scale newsprint recycling plant could be up and running in two years time. The Board of Australian Newsprint Mills announced on 12 February that it will immediately spend \$4 million for an Environmental Impact Statement and related work to construct such a plant.

ANM is now deciding on the best location for the recycling plant — Sydney, Melbourne, Albury, or Boyer in Tasmania.

"As a minimum, we are looking at recycling 130,000 tonnes of wastepaper per year," said ANM Managing Direc-

tor, Mr Graham Ogilvie. "We want the plant up and running as soon as possible," said Mr Ogilvie.

The project budget is expected to be around \$100 million and ANM says that the technology used in modern recycling plants is "very good" and overcomes earlier environmental concerns.

"Absolutely everyone, Governments, publishers, conservation groups and the general public want us to succeed," said Mr Ogilvie. "We are looking at commissioning the plant towards the end of 1992," he said.

EARTH GARDEN UNCLASSIFIEDS

Unclassifieds are 24 cents per word, prepaid. The deadline for the next issue is 4 May.

MUDBRICKS pressed on site anywhere in Tassie. Use your own resources and labour, up to 200 bricks per hour, 400 x 200 x 150 mm. 50 cents per brick. For more details ring Pete on (003) 76112.

AUSTRALIAN HERB SOCIETY. Members receive a quarterly magazine, seed from Seed Bank free, access to tape lending library. The society has been formed to disseminate and propagate the knowledge of growing, gathering and using herbs. Write to the Secretary, PO Box 110, Mapleton, Qld, 4560.

HEALTHY PLANTS of better quality and quantity (300% more) as the earthworm increases the availability of nutrients and minerals to plants by up to 12 times. They aerate, improve water capacity, break up hardpans, bind sandy soils, deodourise, prevent transplant shock and much more. Nature's way at her best. \$8 for 500 + \$1.50 p & p or FREE benefits leaflet with prices:— The Big Worm, PO Box 458, Upper Mt Gravatt, Brisbane, Qld, 4122. Established 6 years. Also available African Nightcrawlers (can grow to 12").

WATER PURIFICATION is important for optimum health today. Reverse osmosis filters consistently provide a high standard of purification, are easy to use and economical in price. Several models available. Gillian Summerbell, PO Box 1519, Hornsby, NSW, 2077. Phone (02) 477 2838.

ORGANIC GARDENING COURSE on working organic farm. For information ring Pia (after 5 pm) or write to Box 325, Emerald, VIC, 3782.

GOURD SEEDS, Books and Gourd magazines, 1, 2, and 3rd editions are out now. Send \$3.50 per edition. Purchase all 3 editions and you'll receive a free packet of mixed gourd seed plus a catalogue. Send to The Gour dian, 187 George St, East Maitland, NSW, 2323.

NATURALLY DRIED FRUIT — a book of ideas about natural sundrying of fruit using no chemicals. \$9 posted. Helen Poyntz, "Foznez", RMB 1182, Wooragee, VIC, 3747.

COMPANION PLANTING CHART. Over 90 vegetables, herbs, and fruits, including plants as insect repellents. Mail order \$4.50 (postage included). SOW WHEN CHART. Suggested sowing times for 100 vegetables, herbs and flowers. Mail order \$5.00 (postage included). 'Plum Products' (E) RMB 2907, Bruthen, Vic, 3885.

BOOKS, Australiana, etc. Lists from R Suters, PO Box 127, Figtree, NSW, 2525.

AUTHORS WANTED. Fiction/non-fiction. You don't have to be a latter day Shakespeare. We're not a 'vanity' publisher, or correspondence course. Imaginative works most welcome. Send along SASE to New Rainbow Publications, PO Box 244, Broadmeadow, NSW, 2292.

LOVE HEALS, by Wendy Cook. \$19.99 posted. Bulk \$15pp. Minnie, PMB 1, John's River, NSW, 2443.

ORGANIC PAWPAW GROWERS needed for natural dried pawpaw industry. Contact Ausforest, PMB 1, John's River, NSW, 2443.

100% PURE ESSENTIAL OILS, CP herbs, citrus, exotic flowers, nuts. Distributor: Minnie, PMB 1, John's River, NSW, 2443.

CENTRAL VICTORIA — SHED/GARAGE ERECTOR, HANDYMAN & ODD JOBS. Most kinds of general work carried out with no fuss and no delay. Sick of waiting for months for a hand with that job? I am based at Trentham in Victoria's Central Highlands. Reasonable rates. Please ring Ron Siddons on (054) 241 574. Will travel to many areas (eg from Gisborne to Castlemaine etc). Recommended by Earth Garden editors, Camille & Alan.

SOLAR PANELS. 35 watt panels for \$285. 10 year warranty. Also, many more bargains with solar power products.

Write to CHOICE ELECTRIC, 3 Prospect St, Bowen Hills, Qld, 4006, or call Sean at (07) 2524909.

RAINFOREST SEEDS. 3/4 of Australia's rainforests have gone. Help repair the Earth by regenerating rainforest on your land. Please send two stamps for our new seed list and hints on growing rainforest seeds. Write to Bellingen Valley Rainforest Seeds, Private Mail Bag, Bellingen, NSW, 2454.

PERMACULTURE DESIGN COURSE, 29th April — 12th May, 1990. Teacher: Lea Harrison. Intensive 12 day residential course, held on farm in Tweed Valley, north-eastern NSW. Course includes lectures, slides, videos, outdoor observation and practice in designing. Limit 20 people. No previous experience necessary. Cost \$500, covers tuition, food and accommodation. Further details from: Lea Harrison, Stoddarts Road, Tyalgum, NSW, 2484. Phone (066) 793242.

WANTED — A copy of 'Small Scale Grain Raising' by Gene Logsdon. Greg Layman, 43 Macintosh St, Mascot 2020.

WANTED business partner — active and/or financial for advanced tree nursery at Robertson. Aiming for sustainability with field grown stock. Biodynamics a possibility. Contact Pam Oslear AH on (048) 682287.

RAINFOREST and **UNCOMMON NATIVE** plants suitable for the Grafton area. A good range of hardy ornamentals suitable for small or large gardens, indoors etc, including hard to get and endangered species. Tullymorgan Native Plants via Maclean. Phone (066) 452109.

LOOKING for more meaning in your life? Women are invited to stay at our rural property one week or longer, June 11— July 6. Opportunity for exploring meditation, crafts, plus rest, refreshment. Food, accommodation free. Write Sister Helen, Sisters of the Church (Anglican), Dondingalong, via Kempsey 2440. Telephone (065) 669244. See the article in this issue of Earth Garden.



LAND LINES are for people buying, selling, seeking or sharing houses and land. It is your responsibility to check all deals. We charge a rate of 24 cents per word (prepaid) for a listing of any desired length, plus \$20 for a professionally-drawn illustration to go with your ad, taken from any old tatty photo you care to send us. All **LAND LINES** must include your name and address (phone number is optional). **LAND LINES** for the October issue should arrive (at **PO Box 188 Moreland, 3058**) by 4 May.

BELLINGEN NSW, cultural centre of the North Coast. 90 acre farm for sale, with 2 bedroom split level weatherboard house. 10% cleared with 40 bearing fruit and nut trees. Remainder of property heavily timbered with rainforest pockets. Unpolluted river frontage with deep swimming holes, perch and catfish. 30 minutes from Bellingen, 5 minutes from local community school. \$135,000. Phone (066) 551611.

MOOROODUC, VICTORIA. Studio/workshop available for rent. Term/rent negotiable. Rustic stone building in bush setting. Phone Moorooduc, (059) 788356.

MACKAY, NORTH QLD. Mountain property. 57 ha, lightly treed pasture, undulating, scenic. Permanent streams, platypus, dam. 3 bedroom home, concrete fence posts, 5 paddocks, yards, sheds, second powered house site, phone, school bus, adjacent rainforest. Suit tourism, sub-division, or multiple occupancy; \$150,000. Phone (08) 398 2348.

HUNTER VALLEY AREA. Mother and 15 month daughter seek accommodation with person/persons Hunter Valley area (keen on Wollombi). Energetic and willing to tackle any project. Write to Kristine Sheerin, 2 Plane St, Gateshead, NSW, 2290.

STONEFORD VICTORIA. 10 acres, owner built stone house, 2 storey, all pine lined, slate floor on slab. 3 bedroom, built in wardrobes, dormer windows. Large living, dining area, cathedral ceilings, monolithic stone fireplace.

Galley kitchen, wide benches, timber cupboards, modern gas stove and fridge, gas/solar hot water. Large bathroom with separate shower. Large laundry includes washing machine. Storeroom/cool-room. Separate toilet on septic. Verandah on 3 sides. Some finishing needed. Power supply is generator backed solar through inverter. House wired to 240 volt.

Good shed, some building materials. Excellent water supply from 7,000 gall concrete tank and good bore with pump. Rabbit fenced vegetable garden, some fruit trees. Land is open stoney rises. Country well treed with some light bush. Central to one each large, medium and small towns. 2 & 1/2 hours from Melbourne, \$98,000. Mark & Heather McCallum, (052) 351370.

CAPRICORN COAST, QLD. 25 acres, 2 storey solar powered house set in natural bush, 18 km from Yeppoon. 2 horses, chooks, established organic vegetable & herb garden, irrigation, 2 propagation, 1 retail nursery. Small established herb business, heaps of potential. Details PO Box 621, Yeppoon 4703. Phone (079) 397621.

NEAR MELBOURNE. Dancer and woodworker seek two or three bedroom house in bush near Melbourne, preferably within the north-west region. Rent or caretake. Both of us have useful skills and experience. Please phone Stephen (03) 469 2778 or Angela (03) 537 1629.

NSW. Passive solar designed mudbrick house with two year old exposed beams, leadlight and clerestory windows. Cool in summer, warm in winter with open fireplace and slow combustion stove. Gas stove, fridge as well. 6 panel solar 240 volt, generator back-up. Sealed road to front gate but total privacy in rural bush setting. Plenty of water for established garden & orchard. Large workshed and spare room. 1/2 hour to Nymboida and Grafton. Phone on. School bus at gate. 13 acres. \$126,000. Phone (02) 871 5203.

CENTRAL QUEENSLAND. For sale 2 bedroom fully renovated cottage on 4 freehold acres. Power and water. Rich, black soil. Grow anything. Beautiful setting. Situated 60 miles west of Emerald. Ill health forces sale. \$28,000. Contact Mrs L Heitink, 'Sanctuary', CMB, Bogantungan, Qld, 4702.

ROBERTSON NSW— Share of 126 acres bounding onto National Parks. Weekender only as building permits limited to 2. Adoption of permaculture principles can be a reality if we can obtain financial support, by way of shares in the land. Contact Pam Oslear AH on (048) 682287.

SPRINGBROOK, QLD. 22 acres rainforest. Common border and track link with national park. Bordered both sides by rainforest, plus clifftop border offering spectacular views. Unapproved open plan cottage, suspended loft bedroom, polished floors, new kitchen, bathroom and s/c stove. Power, phone, outbuildings, sealed approach. Good drive to secluded homesite nestled in forest. Unique property of outstanding biological and aesthetic worth. Deserves caring and respectful owners. \$135,000. Phone (07) 378 9374. M & L McClelland, 34 Noreen St, Chapel Hill, 4069.

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The Squatters
by Geoffrey Dutton
Viking O'Neil
\$19.99

The squatters are often credited with 'opening up' Australia, with building up its agriculturally-based prosperity. There are many opinions about them— that they were scoundrels or pioneers, 'bunyip aristocrats' or gentlemen of culture and wealth.

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Geoffrey Dutton, a well-known South Australian writer, is himself a descendant of one of Australia's most prominent squatter families.

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EG3: Herbs ... compost ... fast fertiliser ... all about goats ... mudbricks ... domes ... water wheel ... bread ... salads ... pottery ... spinning ... vegies.

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EG5: The wind — windmills ... windpumps ... generators ... raku pottery ... Cinva ram poultry ... Hamburgs ... moon planting fallout shelter ... vegan way.

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EG11: Water — hydraulic ram ... waterwheels ... okra ... seed primer ... heavy horses ... tomatoes ... soft technology ... wine ... hard cheese ... start with hens.

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EG26: The earth-built kasbahs ... owner built homes in stone ... timber ... mudbricks ... a slab cottage ... tree filling ... solar electricity ... acorns ... compost dunny ... quandong ... pumpkin recipes.

EG27: 100 tropical food plants for Australia (part 1) ... 16 legumes ... winged bean ... pigeon pea ... lablab ... cowpeas ... adzuki bean ... blacksmithing ... bluestone building ... wok cooking.

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EG29: Mudbricks — the monastery at Stroud ... Bob's bonza brickmaker ... earth floors ... curved walls ... herb roof ... cutting area ... low energy design ... coconut mats ... mangoes ... tropical food plants (part 3).

EG30: Organic growing — compost heaps, pits, trenches, boxes, bins and barrels ... no dig ... mulch ... carpets ... semi arid growing ... preserving figs ... tempah ... pasta ... glass bottle windows.

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In our last issue

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